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CONDITIONING
GENERATION
of the Industry

NEWS

ADVERTISER'S COPY

Issued every Monday at
450 West Fort St., Detroit 26, Michigan
Established 1925

Member, Accredited Business Publications
ABP ABC
Member, Audit Bureau of Circulations

Subscription Price, \$6 Per Year

Vol. 76, No. 14, Serial No. 1,394

December 5, 1955

Reentered as second class matter October 3, 1936 at the post office at Detroit, Mich., under the Act of March 3, 1879.

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Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Stories of the Week
Personal Safety Idea
Ansul Pioneers
Safety Belts
How Times Have Changed!
Reverse Twist
Out of Our Mailbag
What's Happiness?

Stories of the Week

Many of the best laughs submitted to "Dope" come from women (long-suffering wives and secretaries). Here's a recent twitter from a subscriber's wife who resides in Jackson, Mich.:

"I save dollar bills. Now and then I can snatch a buck from the stingy allowance my husband gives me. Where do I hide them? Within the pages of Dante's *Inferno*. When I mumble to myself: 'Where in Hell did I put that money?' I know where to find it."

"It's just \$10 down, Mrs. Whoozis. Then you pay no more for six months."

"Who told you," she bristled, suspiciously, "about my husband?"

Mutual good friend, a not-so-dashing businessman whose waistline expands while his forehead recedes, checked in for his regular 5:15 martinis.

Year after year it had been his custom to down two or three quick cocktails after leaving the harrassments of his office—then catch a suburban train home. Rarely was this routine interrupted.

By some queer quirk of circumstances a lovely, lonely, blonde sat down beside him. She confessed that her husband had died, and left her a million dollars, but no friends. Sympathetically he listened to her sad story. One thing led to another, and it was 3 a.m. before he got home.

To his wife he made a clean breast of the whole affair—sparing neither himself, nor the disappointing details.

"A likely story you invented," Wife fumed. "How much money did you lose in the poker game?"

Personal Safety Idea

"Dope's" job requires frequent travel, and he gets a big kick out of between-cities automobile jaunts in a responsive car. It's one of the few personal pleasures left for those of us in the Creeping Age set. However, some damfool always tries to

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Why the Big Boys Are Gambling Smartly

By George F. Taubeneck

BOOM or BUST? Two schools of thought prevail today. One, backed by all human experience throughout history, reminds us that "everything which goes up must come down." (That's the economic version of the Law of Gravity.)

People in this group feel that:

- (a) stock market prices are too high;
- (b) the national debt is too high;
- (c) instalment-type consumer debt is too high;
- (d) our production facilities—from farm to factory—

have outstripped the world's capacity to buy; hence over-supplies of foodstuffs soon may be joined by a glut of manufactured goods;

- (e) big business is squeezing out little business;

(f) eventually all this will result in unemployment, foreclosures, repossessions, bankruptcies—and another depression.

Nobody can say for sure that these pessimists are wrong. Their case is plausible. And quite a few small businessmen have an uneasy feeling that the pessimists are right.

Yet, look what happening on the other side of the fence. The optimists aren't saying much, but they're gambling

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Airtemp Introduces Norge Announces Enlarged '56 Line 1956 'Tri-Level' Of Room Units Refrigerator

NEW YORK CITY—Airtemp Div., Chrysler Corp. last week introduced its greatly-enlarged "Forward Look" 1956 room air conditioner line consisting of three major divisions.

The new line includes "Imperial" room air conditioners which are designed for either "in-the-wall" or "in-the-window" installation, a completely new line of conventional window flush-mounted models, and new casement window room unit models.

It was also announced that for 1956, Airtemp is discontinuing the publication of "factory retail at factory" or "suggested retail" room air conditioner prices.

As a result of new models and line additions, Airtemp dealers will be offering the public a selection of 15 different room

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CHICAGO—The 1956 Norge "Tri-Level" refrigerator, which provides three separate food storage compartments, was introduced recently by Norge Div., Borg-Warner Corp.

The new model also features a two-tone design concept. The exteriors are finished in white, pink, green, or yellow, and accommodate copper, satin-chrome, or gray lightweight aluminum panels over the upper part of the door.

"Our handling of color is as practical for the dealer as it is versatile for the consumer," explained R. C. Connell, Norge vice president of sales. "We provide 18 color combinations but the dealer needs only four basic models. In addition, the homeowner can change the decor of her refrigerator any time she redecorates her kitchen."

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Only 1 Home In 22 Has Mechanical Cooling, Du Pont Survey Discovers

ATLANTIC CITY, N. J.—Only one home in 22 is equipped with mechanical cooling of some sort, the Du Pont Co. stated last week in reporting initial findings of its first annual survey of the home cooling market. It also reported that of the people surveyed, 91.8% had never been solicited to purchase an air conditioner, either by a salesman or mail.

The unexpectedly minor penetration of the estimated 45 million dwelling units brought

about a theory that quite probably more room conditioners are being installed for commercial applications than had been thought.

Only 4.3% of the 13,441 households interviewed in a nationwide "scientific probability" sample of metropolitan and urban residents said they owned a room unit. Another two-tenths of 1% said they had central air conditioning systems, while an additional 6.2% indi-

(Concluded on Back Page, Col. 1)

ASHAE To Meet In Cincinnati Jan 23 to 25

CINCINNATI—Eight technical sessions, including two symposiums, have been programmed for the 62nd annual meeting of the American Society of Heating and Air-Conditioning Engineers to be held at the Sheraton-Gibson hotel here Jan. 23 to 25, 1956.

One symposium will be devoted to air pollution, the other to high velocity air distribution.

Varied topics are scheduled for the regular sessions. Discussions are planned on heating panels, jets, fittings, equip-

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Bulk Milk Cooler Now Serving Soft Drink Industry

By George M. Hanning

MIAMI, Fla.—The farm bulk milk cooler, which has made such strides in dairy farming in the past decade, is now making its appearance in the soft drink bottling industry as a syrup tank.

George Pryor, manager of

Pictures of exhibits at the 37th annual meeting of the American Bottlers of Carbonated Beverages in Miami appear on pages 20 and 21 of this issue.

the beverage division, Cherry-Burrell Corp., speaking at the 37th annual meeting of the American Bottlers of Carbonated Beverages, pointed out that the syrup tank with a built-in refrigeration system—which is the bulk milk cooler with a slight change in the agitator to make it more suitable to mixing syrups—performs very satisfactorily for the bottler because it can hold temperatures very closely and thus produce a more perfect product.

These tanks are available to the bottler in sizes from 50 gals. on up, he said.

Pryor said that while the syrup room has in the past

(Concluded on Back Page, Col. 4)

Opening Day Show Crowd Nears 6,500

ATLANTIC CITY, N. J., Nov. 28—With registered attendance on the opening day nearing the 6,500 mark, an all-time high, the 9th Exposition of the Air Conditioning and Refrigeration Industry got under way today with manufacturers offering the widest variety of industry products seen on display in years.

The attendance on the first

Photographic coverage of the exhibits at the 9th ARI Exposition, and reports on the various industry groups meetings held in Atlantic City during the period of the Show, will be reported in future issues of the News.

day was 50% greater than that for the first day of the last previous Exposition held in Cleveland, and 80% greater than the opening day the last time the Show was held in Atlantic City, six years ago, re-

(Concluded on Page 25, Col. 1)

Westinghouse Has 'Buy-Back' Plan For '56 Room Line

ATLANTIC CITY, N. J.—Special financing, price protection for distributors and dealers, a policy of line stabilization, and a "Buy-Back" plan to protect the dealer from end-of-the-season inventories are features of the marketing plan for the 1956 line of Westinghouse room air conditioners.

The line, featuring an illuminated control panel, single dial control, new decorator styling, and an electronic air cleaner (available as an accessory), was introduced here at the opening of the ARI Exposition. The eight new models include three lines: "Custom," "Deluxe," and "Special."

According to C. W. Paulson, acting manager of the room air conditioner department for Westinghouse, the marketing

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Gov't Reports More Built-In Equipment Included In FHA Insured Mortgages

WASHINGTON, D. C. — The Federal Housing Administration recently reported that more built-in kitchen equipment is being included in Government-insured home mortgages.

Most of the 75 field offices have found it is a common practice for homes to be sold with the equipment in place and that this is proving acceptable to private lending institutions, FHA said.

It was pointed out, however, that FHA still refuses to approve Title One home modernization loans for equipping existing dwellings with appliances and kitchen equipment.

For example, refrigerators, ranges, washers, dryers, and dishwashers are not acceptable under Title One. But cabinets,

sinks, and permanently-installed sink-dishwasher combinations are normally approved for such mortgages.

FHA's underwriting division here said field reports show that built-in refrigerators and ranges are generally acceptable nationwide for mortgage insurance. Dishwashers also are being approved by FHA offices for such insurance, although on a somewhat narrower scale, and "packaged kitchens" are being widely accepted, it was further pointed out.

In general, most standard kitchen equipment of the built-in type not listed as "easily removable" is being accepted by FHA, the agency said, adding that local conditions determine financing acceptability.

Warren Elects 2 New Directors

ATLANTA—Earl N. Barton and Leonard S. Venable were elected directors at the annual stockholders' meeting at The Warren Co.

Barton is assistant sales manager and director of advertising. Venable is assistant secretary and assistant treasurer.

Other directors of the company are Virgil P. Warren, chairman of the board; John D. Harris, president; Roger D. Jacobs, executive vice president and secretary; Wade M. Mayo, vice president in charge of engineering and manufacturing; and Theron E. Scarbrough, treasurer.

Low Bidder

TUPELO, Miss.—Tupelo Refrigeration Co. here was low bidder for air conditioning a plant for Super-Sagless Spring Co.

Sayre Predicts Norge Sales for 1956 Will Be 50% Above 1955

CHICAGO—Refrigerator production of Norge Div., Borg-Warner Corp., will be at a record high in 1956, about 50% above this year's output, Judson S. Sayre, president, disclosed recently.

He said the expected sales level will put the company in the top three or four in refrigerator volume, adding that there "will be no question" the strengthened distribution and dealer organizations can keep up with the factory pace.

Sayre spoke at a distributor meeting in Chicago, during which Norge introduced 1956 models that feature three food storage compartments and the two-tone styling concept so popular in automobiles.

He predicted that 1956 will be

a "year of feature selling," with price cutting and price advertising being far less important than in any recent year.

Starting this month Norge will stage one of the greatest merchandising drives ever seen in the appliance industry, he noted.

"Our dealer-distributor force, strengthened some 100% during the past year, assures that the merchandising effort will be carried through to the retail floor," he said.

Kelvinator Billings for October 14% above 1954

DETROIT — Kelvinator launched its 1956 fiscal year in October with a 14% increase in billings over the same month a year ago, Walter Jeffrey, vice president in charge of sales, announced.

Laundry equipment, which led all products with a 22% gain over October, 1954, was also up 11% over September, when an all-time high in Kelvinator laundry equipment sales was set.

Refrigerator billings increased 15% over October a year ago, with only lower-priced models amounting to half of the new refrigerator line available.

Vornado Announces Prices On Custom Window Units

WICHITA, Kan. — Suggested retail prices for its 1956 Vornado Custom window air conditioner models have been announced by the O. A. Sutton Corp. here. Prices for other models were not included. Custom prices follow:

CUSTOM MODELS		Suggested Retail Price
Model	115 Volts	
C50B-1	\$289.95
C75B-1	339.95
M75B-1	339.95
	230 Volts	
C75B-2	\$339.95
M75B-2	339.95
M-00B-2	369.95
M200B-2	479.95
	208 Volts	
C75B-3	\$349.95
M75B-3	349.95
M100B-3	379.95
M200B-3	489.95
All above prices include excise tax where applicable.		

there's an
in the
NEW



of a BIG DIFFERENCE

KRAMER

THERMOBANK

Here are the major improvements

A NEW HEAT SOURCE - Instead of using only the sensible heat of the THERMOBANK, the new "L" THERMOBANK now utilizes both its sensible heat plus its latent heat of fusion by actually freezing a tube of ice around its reevaporator coil during the defrost. (The "L" stands for latent). This, coupled with significant improvements in the design of the reevaporator coil, gives the "L" THERMOBANK four to five times more heat storage for instant defrost and complete reevaporation.

NO LIQUID REFRIGERANT TO COMPRESSOR - With the vastly larger amount of heat now available in the "L" THERMOBANK, no liquid can return to the compressor during defrost. This is a singular and distinctive feature of the "L" system vastly different from any other automatic hot gas defrost system now available.

CONSTANT CRANKCASE PRESSURE - The "L" system maintains a predetermined low crankcase pressure, thus permitting

the use of standard low temperature compressors without danger of motor overloading during the defrost, or oil foaming upon resumption of the refrigeration cycle. The low temperature compressors are less costly since they deliver more Btu's per horsepower.

NO EXTRA SUPERHEAT DUE TO REEVAPORATOR - On larger systems the suction line by-passes around the THERMOBANK during normal operation, thus eliminating any superheat pick-up from the bank by the suction gases during normal operation. This is very important with F-22.

"LOW-LOW" TEMPERATURES - Extremely low temperatures are now achieved with the "L" THERMOBANK and a complete line of "Low-Low" systems are now available.

NO WINTER PROBLEMS - The "L" THERMOBANK can be housed in an unheated space, thus making possible the use of the "L" THERMOBANK in any location, even the arctic circle.

Quality Control



WRITE FOR COMPLETE INFORMATION
LA CROSSE COOLER CO.
3000 LOSEY BLVD., LA CROSSE, WIS.
Export Office: 80 Broad St., N. Y. City

KRAMER TRENTON CO. • Trenton 5, N.J.

THE NEW 1956 FABULOUS FOODARAMA by KELVINATOR

For traffic magic, sales magic, profit magic—there's still nothing else like it in the world!



Here is the world's greatest business-building appliance—now more beautiful, more colorful, packed with even greater sales appeal for 1956.

Never before has a new appliance won the hearts and opened the purses of American families so completely as the Fabulous Foodarama has done in a few short months. No other new appliance ever won such swift and wide acceptance. No other new appliance ever aroused such excitement, built such store traffic, generated such dealer sales volume both for itself and for a whole line of other appliances. There's nothing

else like it in the world! It set records from coast to coast.

Yet this smashing reception given the Fabulous Foodarama in the months following its introduction is already being topped by this new and greater Foodarama for 1956.

Get set with the Fabulous Foodarama and Kelvinator now for 1956. Give yourself the selling advantage of the great Foodarama engineering, styling and features you find in every model of the complete 1956 Kelvinator refrigerator line—the big Kelvinator differences that help make Kelvinator the most valuable franchise in the industry.

There's much of the Magic of FOODARAMA in every 1956 Kelvinator Refrigerator
FOODARAMA ENGINEERING • FOODARAMA STYLING • FOODARAMA FEATURES



Big
102 Lb.
freezer
at
the
bottom
Model K68F-12



Big
80 Lb.
freezer
at
the
top
Model K67F-12



And More
Features
than
you've ever
seen in
Any Line!
Model K47F-10



© Walt Disney Productions

More than ever in 1956—**Kelvinator** Difference Means Dollars to You
Division of American Motors, Detroit 32, Michigan

Airtemp Room Air Conditioners--

(Concluded from Page 1, Col. 2)

air conditioners covering every type of market, it was pointed out. Only eight Airtemp room unit models were available last season. The new units range in capacity from $\frac{1}{2}$ to $1\frac{1}{2}$ hp.

Unveiling of the new line took place at the Hotel Roosevelt here where east coast Airtemp distributors meet for the first of a series of room air conditioner introductory meetings being sponsored by the company.

Airtemp said the compact Imperial has little inside-room projection and is completely flush on the outside. Because of this latter fact, it conforms with all city codes on outside projection and will not alter the outward appearance of a home or building, the company noted.

This air conditioner can be in-

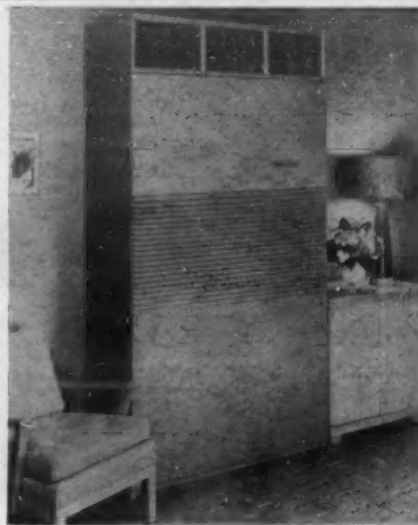
stalled in either of two locations. It can be built into the wall or, similar to a conventional room conditioner, it can be installed in a 28-in. window or larger. This Airtemp design innovation offers high operating efficiency as well as installation flexibility, the company stated.

Control switches are situated on the side of the cabinet. The conditioner is finished in neutral tones of "Dodson Gray" and "London Beige."

Imperials for either in-the-wall or in-the-window installation are available in $\frac{1}{2}$, $\frac{3}{4}$, and 1-hp. capacities. A cooling thermostat is standard on all units.

Conventional window room air conditioners are offered in "Deluxe" and "Special" models.

The new Deluxe conventional air conditioner has been specifically designed for flush mount-



1956 AIRTEMP packaged air conditioners feature new "Forward Look" design.



NEW Airtemp "Deluxe" conventional window room air conditioner.

sign, is made of modified "Polystyrene" and is adjustable.

Other features include quiet operation; precision thermostat control; large filter; high and low speed fan control; fresh air and exhaust air control; Airtemp "Maxi-fin" coil which removes excess moisture from the air; and hermetically-sealed compressor designed for continuous service.

Deluxe conventional room air



AIRTEMP "Imperial" can be built into wall (as shown) or installed in window.

conditioners are available in $\frac{3}{4}$, 1, and $1\frac{1}{2}$ -hp. capacities. Similarly styled and possessing the same cooling capacity, economy-priced Special conventional models are being offered in $\frac{3}{4}$ and 1-hp. sizes, Airtemp said.

Also offered by Airtemp for 1956 is a series of four "casement window" room air conditioners. Deluxe and economy-priced Special models will be available, both in $\frac{1}{2}$ and $\frac{3}{4}$ -hp. capacities.

All four models, similar in size and design, fit easily into any standard casement window or are easily adapted to windows of non-standard dimensions, according to Airtemp.

"For mounting, no window alterations whatsoever is necessary; only the inside screen needs to be removed," the company said. "As the unit is attached to the window in the same manner as the screen, installation can be completed in a matter of minutes."

"The compact conditioner is entirely enclosed within the room. Because of this fact, the external appearance of the home or building is not altered in any way. When the unit is not in use, the window can be closed and locked."

Deluxe models have a two-speed blower for night operation and bedroom application.

"As announced earlier by M. T. Bard, room air conditioner sales manager, Airtemp plans to produce in excess of 100,000 room air conditioners for 1956," commented J. V. Browne, Jr., room air conditioner merchandising manager. "That will be a new high for the company."

"Of course, the goal to be achieved is the retail sale of all the units produced. The company, therefore, has developed a much broader and more thorough room air conditioner merchandising program."

Airtemp Bows Restyled Packaged Conditioners

ATLANTIC CITY, N. J.—At the 9th Exposition of the Air Conditioning and Refrigeration Industry, Airtemp Div. of Chrysler Corp. displayed for the first time publicly the company's completely restyled line of "packaged" air conditioners.

The entire 1956 line of water-cooled and waterless packaged air conditioners has been redesigned, Airtemp said. The attractive new "Forward Look" design "achieves distinctiveness through the simplicity of modernistic, functional styling."

Finished in neutral spatter gray enamel, all Airtemp self-contained units (in sizes from 2 hp. to 30 hp.) will now be available in the new cabinet.



FIRST IN THE FIELD ON EVERY COUNT!

MUELLER BRASS CO.

Streamline

all-copper adapters

FIRST developed by the original of the solder type fitting

FIRST in sales with a record of over 5 million sold in just one year!

FIRST complete line in both O.D. and fitting ends

In just one year this new Mueller Brass Co. all-copper adapter has set a smashing record on every count . . . engineering, sales and performance. They are available as copper-to-male and fitting-to-male styles in sizes from $\frac{1}{4}$ " to $2\frac{3}{8}$ ". And, the dependability of this fine STREAMLINE adapter is proved by the fact that over 5 million have been put in service in the short space of one year. Many excellent engineering features have been incorporated in these adapters which are produced from heavy wall copper tube. Threads are rolled rather than machined, actually improving the grain structure of the metal and affording greater strength. The pure wrought copper is superior for soldering because heat is transmitted evenly and quickly. The smooth bore and the precision machined stops permit maximum flow. You'll like these new adapters, and the many advantages they offer . . . and you know these "thoroughbreds" will live up to every claim because they're made by the originators of the solder-type fitting. If it's Streamline, it's got to be good.




161-R



MUELLER BRASS CO. PORT HURON 9, MICHIGAN

For more information about products advertised on this page use Information Center, page 18.



"It's great to be a Carrier Dealer— with this new Weathermaker to sell!"

This is it, man!

A dream of
an air conditioner!

Looks like a million.

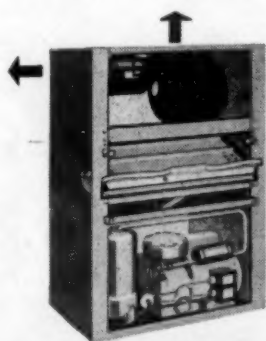
Loaded with exclusive
sales advantages.

And designed for lower
installation costs!

You get in . . . you get out . . . you get your money fast!



Weathermakers install in a breeze! Take wiring, for example. Electrical center is prewired at the factory. You make connections at one outlet box on the side. You get in and get out in a hurry!



Installation's fast because the unit is flexible. If headroom is low, the fan can be changed to rear discharge by inverting the fan platform. No cutting or patching of the casing is required.

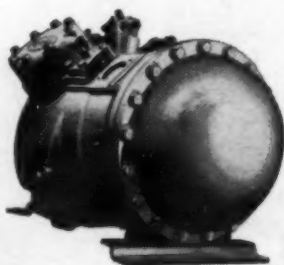


5-way air return can cut the amount of return-air ductwork—gives more freedom in location. Air can enter at the front, sides, back, bottom. You finish up fast—get your cash in a flash!

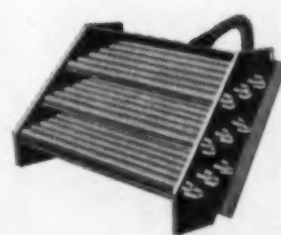
You see 'em . . . you show 'em . . . you sell the job fast!



They can't resist this Golden Aerodial! Main control switch, automatic thermostat control and reset button are located under eye-level lucite dome. Dial is beautiful 22-karat gold plated!



Lift up the hood and let 'em see this hermetically-sealed motor-compressor. Triple-valve, low-friction design gives greater capacity with less power input. Never needs lubrication!



Exclusive Multiflow cooling coil that is staggered in the air path for more efficient cooling—and other high-performance details—cinch the sale. Be a Carrier Dealer and see for yourself!

And look at the help you get from your Carrier distributor:

Complete course in how to sell the Weathermaker . . . the industry's most complete line of water and air cooled self-contained equipment . . . Weathermaker Handbook for sure-fire selling . . . low-cost finance and stock-ordering plans . . . on-the-spot assistance in engineering, sales and advertising!

With the new Weathermaker, you can be the biggest salesman in town! Write us today or check your phone book for the name of distributor who will tell you in dollar-doubling detail how you can see 'em and show 'em and get your money fast! Carrier Corporation, Syracuse, New York.



**air conditioning
refrigeration
Industrial heating**

ASHAE Meeting Program --

(Concluded from Page 1)

ment noise, electric analog studies, physiological reactions to heat stress, odors, dual duct systems, and the like.

For entertainment the Cincinnati ASHAE chapter has arranged a tea and reception Sunday afternoon, Jan. 22, a welcome luncheon Monday featuring F. W. Giesel, business manager of the Cincinnati Post, a "Fun In Kentucky" party Monday night with dinner and entertainment at Beverly Hills country club, the annual banquet Wednesday evening, plus inspection tours and special events for the ladies.

Advance program for the meeting has been announced as follows:

MONDAY, JAN. 23

10 a.m.—First session (Ballroom).

President's report, John E. Haines.

Council report, A. V. Hutchinson.

Treasurer's report, E. R. Queer.

Committee on Research report, B. H. Jennings.

"Noise Production and Damping in Water Piping," W. L. Rogers.

12:15 p.m.—Welcome luncheon (Roof).

2 p.m.—Second session (Ballroom).

"Performance of Covered Hot Water Floor Panels, Part I Thermal Characteristics," E. L. Sartain and W. S. Harris.

"Thermal Design of Warm Water Ceiling Panels," L. F. Schutrum, C. M. Humphreys, and G. V. Parmelee.

"Heat Gain Through Glass Skylight Fenestrations," D. J. Vild and G. V. Parmelee.

2:30 p.m.—Third session (Roof).

"Moisture in Transient Heat Flow," K. R. Solvason.

"Characteristics of Downward Jets from a Vertical Discharge Unit Heater," S. M. Yen, Linn Helander, and L. B. Knee.

"Resistance of Rectangular Divided Fittings," L. G. Miller, C. H. Pesterfield, and R. J. Waalkes.

6:45 p.m.—Kentucky party.

TUESDAY, JAN. 24

9:30 a.m.—Fourth session (Ballroom).

Amendments to by-laws.

Report of inspectors of election, John Everetts, Jr., vice chairman.

"Evaluation of Equipment Noise," H. C. Hardy and D. E. Bishop.

"Electric Analog Studies of Single Wall Sections," Harry Buchberg.

"Electric Analog Analysis of a Cooled Structure Complex," C. F. Kayan.

10 a.m.—Fifth session (Roof).

"Index for Evaluating Heat Stress in Terms of Resulting Physiological Strains," H. S. Belding and T. F. Hatch.

"Body Evaporation During Short Exposures to Various Temperatures, Humidities, Pressures, and Mass Velocities," J. W. McCutchan.

"Humidity Effects on the Odor Problem," R. L. Kuehner.

WEDNESDAY, JAN. 25

9:30 a.m.—Sixth session (Ballroom).

"Elements of Dual Duct Design and Performance," N. S. Shataloff.

"Branch Fitting Performance at High Velocity," C. M. Ashley, S. F. Gilman, and R. A. Church.

"Control of High Velocity Air Distribution," E. F. Snyder, Jr.

2 p.m.—Seventh session (Ballroom).

High velocity air distribution symposium.

"Dust Design," M. W. Wilson.

"Economics, Costs vs. Velocity," John Everetts, Jr.

"Fan and Air Noises," C. W. Lemmerman.

"Duct Construction," K. A. J. Monier.

"Field Testing," R. D. Tutt.

Report of committee on resolutions.

Unfinished and new business.

2:00 p.m.—Eighth session (Roof).

Air pollution symposium.

"Health Aspects," Arthur Stern.

"Smog," Gordon Larsen.

"Regulations," Harry Ballman.

"Cleaning," J. W. May.

"Practical Approach," Charles Gruber.

"Enforcement," J. H. Carter.

6:30 p.m. Social hour.

7 p.m.—Annual banquet.

Viking Air Products Names M. E. Kelley

CLEVELAND — Richard Gang, general sales manager of Viking Air Products, a division of National-U. S. Radiator Corp., has announced the recent appointment of M. E. Kelley to represent Viking in Iowa and surrounding states.

Kelley has been a sales engineer in the Iowa area for the past five years. He will make his headquarters at 707 West 12th St., Cedar Falls, Iowa.

Worthington Names Bourque Comptroller At Ampere Works

HARRISON, N. J.—George H. Bourque has been named works comptroller at Worthington Corp.'s newly-acquired Ampere Works in East Orange, N. J., announces C. A. Packard, the corporation's vice president and comptroller at the company headquarters.

Replacing Bourque in his former position as works comptroller at the Decatur, Ala. plant is Glenn A. Collins who has served as assistant works comptroller there for the past two years.

Early in 1956, the Ampere Works will accommodate two major divisions of Worthington: the Air Conditioning and Refrigeration Div. and the Standard Pump Div., the announcement stated.

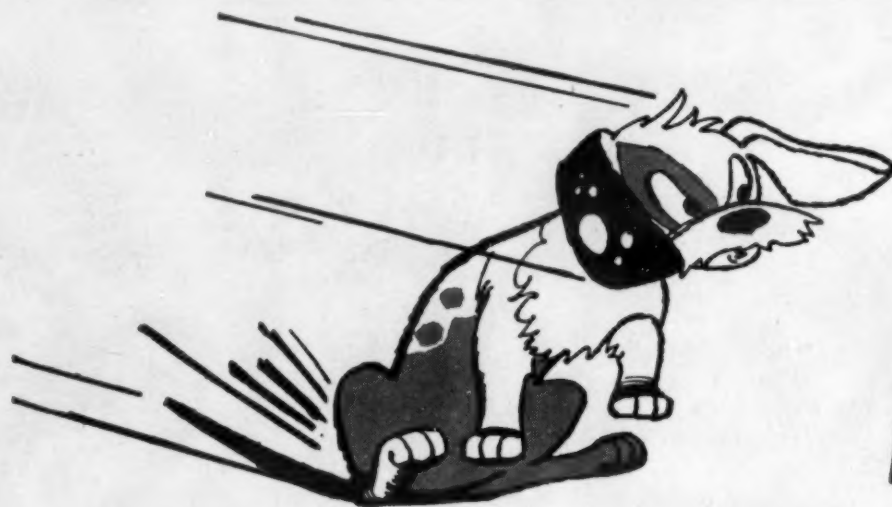
Revcor Will Double Plant Facilities

CARPENTERSVILLE, Ill.—Revcor, engineer and manufacturer of single and double blower wheels and housings, is embarking on an expansion program that will double its production facilities.

This is the company's second expansion in three years. The company recently built a modern manufacturing plant in Carpentersville. This plant will be enlarged to double its present size to provide the facilities for the increased production program.

Court House To Be Cooled

TUNICA, Miss.—The Board of Supervisors of Tunica County have advertised for bids for air conditioning the county court house. Plans call for the installation of a central system.



Wait!

If you're thinking of changing dealerships...be sure you see what's REALLY NEW in modern air conditioning!

Sensational New Development!

LENNOX

SO EXCITINGLY NEW AND DIFFERENT WE DON'T DARE REVEAL THE DETAILS UNTIL JANUARY 1

COMING...

JANUARY 1ST

MAIL COUPON TODAY!

THE LENNOX FURNACE COMPANY

(Address your nearest branch. See locations at right.)

Yes...I want to know about the new development in air conditioning as soon as you can release the information. This does not obligate me in any way.

COMPANY.....

ADDRESS.....

CITY.....STATE.....

MY NAME.....

The LENNOX FURNACE COMPANY

Marshalltown, Iowa; Columbus, Ohio; Syracuse, N. Y.;

Ft. Worth, Texas; Decatur, Ga.; Los Angeles, Calif.;

Salt Lake City, Utah; Des Moines, Iowa

In Canada: Toronto and Calgary

Year-Round Air Conditioning Cost In Test Homes Averages \$11-a-Month

AUSTIN, Texas—Winter fuel savings of 35% and comparable savings in cost of summer cooling are noted in the latest report from the Austin Village air conditioning project, according to *House & Home* magazine.

Year-round operating costs for summer and winter air conditioning averaged \$132 or \$11 a month for the 22 test houses, the report shows.

These results, the magazine declares, "indicate that properly built \$15,000 to \$20,000 houses can be air conditioned the year-round in most U. S. cities at comparable costs, i.e., no more than \$150—allowing for varying fuel and electric rates. This is as much as \$100 under what year-round heating and cooling usually runs."

Total fuel bills for heating

alone in 10 of the test village houses last winter averaged \$22.71, the publication says. Nine of the 22 houses were heated for less than \$20, and 15 of them for less than \$25.

Heating bills for comparable conventional houses in Austin were about \$35; for similar Dallas and Houston houses, \$35 to \$40, and in some cases as high as \$50 per season, the magazine said, quoting figures compiled by the Austin office of Southern Union Gas Co.

"Big reason for low bills in the test houses is the wide use of extra insulation—as much as 4 in. thick in walls and up to 6 in. over ceilings," the magazine declares.

"Houses in the South commonly have no wall insulation and only 2 in. ceiling batts. The

extra insulation cost about \$125 per house. Although complete data is not available, the use of double glass in four of the test houses also appears to have greatly cut fuel bills, perhaps more than the insulation," it is stated.

"The extra insulation was specified widely through the test houses mainly because it means savings on summer air conditioning costs. The winter fuel dividends are a surprise bonus even in the mild Texas climate," the periodical continued.

House & Home also makes the somewhat ingenious statement: "A 35% slice off total fuel bills in the cold North would run to real money every winter. This is an important point."

Evidently, the magazine overlooked the fact that most of the newer houses in the cold North usually do have considerable insulation and double glazing of some sort.

Hot Water Heating, Cooling Mfrs. Push Selling Campaign

ABSECON, N. J.—Manufacturers of hot water heating and summer cooling equipment revealed at the recent semiannual meeting here of the Institute of Boiler & Radiator Manufacturers that vigorous merchandising campaigns are, and will be conducted, by firms handling such equipment.

One of the events on the marketing section of the agenda was a round-table discussion by six speakers, each describing the case history of a successful campaign to sell hot water heating and summer cooling.

Delving into "how to" aspects, speakers presented 15-minute stories of how builders have been sold, contractors aided in selling, and architects, consumers and others convinced of the advantages of hot water heating

and chilled water cooling.

Topics and respective speakers were: "Helping Installers Become Salesmen" (Boiler Maker campaign), R. W. Williams, American-Standard; "Selling Quality," E. B. Cole, Crane Co.; "Low Budget Promotion of a New Product" (new home heating-cooling system), A. Brown, Brown Products Co.

Also, "Selling Zoned Heating," H. D. Bissell, Minneapolis-Honeywell Regulator Co.; "Selling the Builder Hot Water Heat," R. S. Doherty, National-U. S. Radiator Corp.; and "Selling Finned-Tube Baseboard," M. L. Lundgren, Vulcan Radiator Co.

In another part of the program, and I-B-R "Selling in Action" skit was produced. Titled "On the Spot," the skit is part of an I-B-R contractor education program which is regularly used at the institute's short courses. It is a sales training demonstration following the learn-by-doing process.

The audience—in this case manufacturers instead of contractor-students—are asked to come up to the stage prepared to sell a hot water heating job to a builder and his architect, played by two members of I-B-R.

In a third event, 17 companies entered the first annual I-B-R promotion contest, initiated this year to stimulate interest in "what the other fellow is creating" in all types of advertising, publicity, and sales promotion materials.

Display panels carried the materials of what each company considered its best campaign in consumer or trade magazines, newspapers, or other media. Certificate awards for exceptional entries were presented by I-B-R to ten companies. They are:

Brown Products Co. (best publicity to trade); Vulcan Radiator Co. (best publicity to consumer); Crane Co. (best sales promotion to trade, including direct mail); H. B. Smith Co. (best consumer promotion and advertising through the dealer); McDonnell & Miller, Inc. (best trade advertising in magazines).

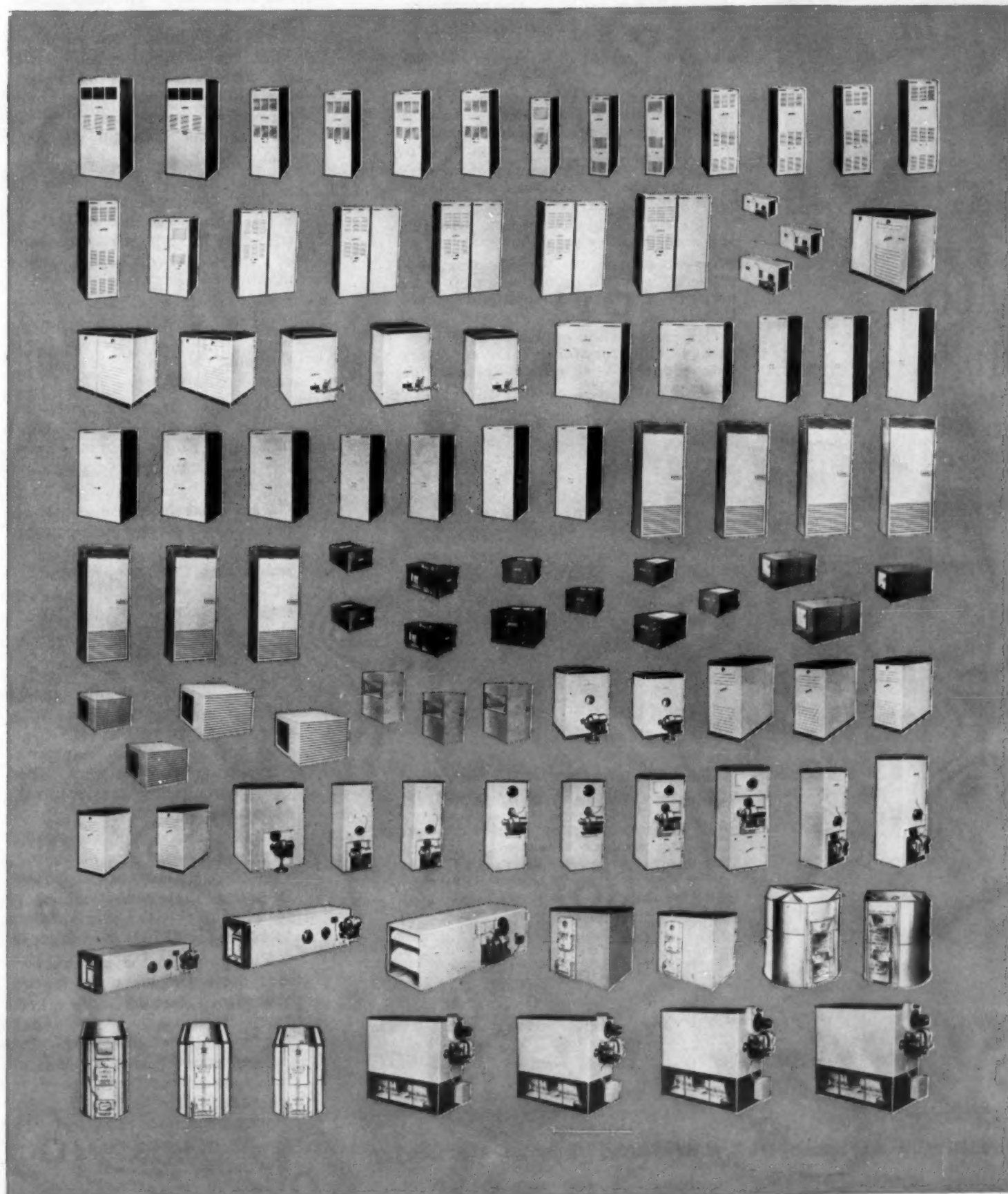
Also, Crane Ltd. (best direct mail to consumer); Minneapolis-Honeywell Regulator Co. (best consumer magazine advertising); Bell & Gossett Co. (best dealer education); American-Standard (best advertising and promotion campaign to dealers); and Taco Heaters, Inc. (special merit award).

Honeywell Appoints A. L. Reed to Post

MINNEAPOLIS — Appointment of A. Lachlan Reed to the newly-created position of director of industry-education relations for Minneapolis-Honeywell Regulator Co. was announced recently by Gerry E. Morse, vice president in charge of employee relations.

Reed has been serving as special assistant to the U. S. Commissioner in Education in Washington since early 1954. He has had varied experience in educational work.

LENNOX ... absolutely the most complete line of air conditioning and heating equipment



Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)
spoil anything good. That's why we applaud the following Winter Driving Advice:

"Keep your windshields and windows clean. You have to see danger to avoid it.

"Follow other vehicles at a safe distance. It takes three to 12 times as far to stop on snow or ice as it does on normal surface."

It's that follow at a safe distance thing which bothers us most.

Too many impatient drivers nowadays breathe down the back of your neck, especially in city traffic.

Ansul Pioneer Safety Belts

Most automobile manufacturers have campaigns under way this year to publicize the fact that safety is "built in" in their new models.

But safety belts, and safety itself, has been an old story with Ansul Chemical and its men who drive company cars. They have been using safety devices for several years.

Last year Ansul autos were driven 1.5 million road miles, and were involved in only seven serious accidents. All but one man escaped with minor abrasions. The seventh man, who was not wearing his safety belt, was hurled halfway out of the car and dragged along the highway. He died several hours after the accident in a hospital.

Ansul has had a safe-driving training program; has preached caution, courtesy, and common sense to its drivers using our highways; and has continued to equip its cars with every practical device likely to contribute to greater safety.

Its safety belts alone have helped pay the cost of this program in lives saved, and in limiting property damage.

How Times Have Changed!

In a Pullman club car the conversation veered toward present-day attitudes about working. Contributed Airtemp's Carl Buchholzer:

"Recently I had an experience which I hope isn't typical. I was visiting a distributor, and a young man there asked for a few moments of my time.

"I'm not making as much

money as I think I should,' began the young man. 'Could you tell me how I could get ahead faster?'

"Feeling magnanimous and even a bit flattered, I invited him to come down and spend the evening with me at my hotel, where I could give him a few ideas on getting ahead.

"Know what he replied?

"He asked if he would get overtime pay for listening to me!"

Reverse Twist

Perhaps no movie director has been so conscientious and rigorous in his search for realism as Cecil B. De Mille. Take, for instance, one incident in the filming of his Biblical "King of Kings."

H. B. Warner was cast as

Jesus. DeMille ordered him to avoid all suspicion of anything remotely connected with "sin" during that production—and for one year afterward. Warner agreed not to smoke, drink, swear, gamble, or be seen with a woman.

When news of this remarkable pact got out, DeMille was swamped with applications for the role of Satan.

Out of Our Mailbag

Dear George:

Attached to this note is the first issue of a new digest-size publication, *The American Salesman*. The appearance of this book may give you several heart twangs, as it did me, since I recall discussing a project of this kind with you several years ago.

To find out what they're trying I talked to both Michael Gore and Dr. Frank Kingdon, the editor, and they are sure of the next million in their pocket.

I took a copy of your "One Foot In the Door" up to them suggesting that they might want to include some of this material in future issues, with proper credit, of course.

ROBERT M. PRICE

Hon. Douglas H. McKay, Secretary of the Interior, writes in the first issue of *The American Salesman*: "The importance of the salesman's job is not always recognized, but when we exalt the productive might and the inventive genius of American industry, we must never forget that unless we sell it, we don't produce it, and our economy does not expand."

There are no salesmen in Russia. Government decree decides who produces what, and who gets it. In the free economy of America, the salesman is the middleman of economic progress, selling what is produced, reporting back to the producer what the public demands. He is the most characteristic man of a free economy.

America urgently needs a million more salesmen right now—men and women who know how to sell more goods to more people.

The American Salesman is being sold only by subscription, and published by The American Salesman, Inc., 49 West 57th St., New York 19, N. Y. Subscriptions are \$5.00 per year.

What's Happiness?

Dr. George Gallup erupts significant findings frequently. One of his recent polls indicated that people would be happier if they had more money. You could have knocked us over with a deposit slip.

Dr. Gallup even ascertained the exact amount of money necessary to insure happiness. It seems that seven out of 10 people interviewed were willing to settle for \$37.00 more a week.

The good doctor has us puzzled, however, when he reports that "men feel that they need more money to make them happy than do women." The reason may be that women already do most of the spending, whereas men probably feel that money is their chief asset in making womenfolk happy.

What we need next is a poll to determine what happiness is.

MORE
FAMOUS NAMES
SELECT
McQuay
RIPPLE-FIN COILS
AIR CONDITIONING UNITS!

The
**Coleman
Company,
Inc.**

WICHITA,
KANSAS

**Admiral
CORPORATION**
Chicago, Ill.

**bryant
heater**
DIVISION
TYLER,
TEXAS

**AMANA
Refrigeration,
Inc.**
AMANA, IOWA

EMINENCE of the manufacturers of air conditioning equipment who rely on McQuay to supply them with Ripple-Fin coils for their air conditioning units is the best recommendation for any product.

More and more famous names are buying McQuay proved and preferred line of coils... the complete line offering all of these advantages:

- Coils constructed with copper tubes and aluminum fins.
- Wide variety of fin spacings, rows deep, fin heights, finned lengths and circuiting patterns for maximum flexibility in custom engineering to meet specific applications.
- Staggered tubes and continuous corrugated fins with full fin collars for maximum heat transfer.
- Ripple-Fin edges for greater strength and more pleasing appearance.
- Latest procedures for cleaning, degreasing, dehydrating, and sealing of coils for shipment, insuring maximum protection.
- Coil construction approved by Underwriters Laboratory for use as evaporators or condensers with either Freon-12 or Freon-22.

Maximum heat transfer efficiency of
Ripple-Fin Coils is a McQUAY EXCLUSIVE!

Only McQuay gives you Ripple-Fin surface—the product of years of research that produced the ultimate in heat transfer for any weight metal as well as construction ruggedness and eye appeal.

McQuay INC.

★ AIR CONDITIONING ★ REFRIGERATION ★ HEATING

Write for engineering assistance on any coil problem. McQUAY, INC. 1607 Broadway N. E., Minneapolis 13, Minn.

For more information about products advertised on this page use Information Center, page 18.

Westinghouse Room Units--

(Concluded from Page 1)

plans have been developed to protect dealers from uncertainties inherent in the room air conditioner business.

"As an aid to dealers in early season buying," Paulson pointed out, "we are making special financing and price protection available."

"In addition, as an incentive to dealers and their salesmen, expense paid trips will be given as rewards for exceptional selling efforts. Six-day tours are planned for Mexico City, Acapulco, Nassau, or Jamaica."

The acting manager also pledged a policy of protecting the dealer from inventory obsolescence. "While Westinghouse will continue its policy of perfecting and introducing new features, we will certainly adhere to a policy of line stabilization," Paulson said.

Also announced by the company is the Buy-Back plan under which distributors will buy back any excess inventory, due to adverse selling weather, remaining after the season.

"Backing up these plans for dealer and distributor protection," Paulson continued, "is an extensive advertising campaign on television, in national magazines and local newspapers. Point-of-sale displays will be available to give dealers complete selling centers in a small floor space. Special training tools are available to aid the salesman on the sales floor."

According to Paulson, the new models are a culmination of over two years of product planning and designing and an expansion of the manufacturing facilities at the Springfield, Mass. plant.

"The 1956 line will be manufactured in the newly-equipped Springfield plant," Paulson said. "Because of limited facilities, the models we marketed in the past two years were built to our specifications by an outside supplier."

All new models are styled in "Alpine Gray." A feature of the Custom line is an illuminated control panel "which is especially convenient in darkened rooms."

"A new patented single dial control provides seven 'Comfort Zones' on Deluxe models and 11 Comfort Zones on Custom models," it was stated. "Each one of these models is equipped with an automatic thermostat to maintain the desired temperature and humidity conditions selected on the single dial control."

"Every model in the line has true flush mount so the drapes can be closed over the unit if desired."

"All models feature 'Full Width Cooling.' This means that there is an evenly distributed air flow from the entire width of the unit."

Grilles can be independently adjusted.

"The air is returned along the lower front edge of the cabinet, giving no interference with draperies or curtains," it was pointed out. "Fiberglass filters are used and can be easily removed for inspection or replacement without the necessity of removing the front cabinet."

The new electronic air cleaner is designed as an accessory

for use with 1956 Custom and Deluxe models. Containing a vacuum tube and a high voltage transformer, it electronically removes particles from the air as small as 1/250,000 of an inch, according to Westinghouse.

In addition to removing pollen, dust, and other irritants, the air cleaner will even remove smoke from the air.

Two Special models provide



WESTINGHOUSE room air conditioner with single dial control and flush mounting.

air conditioning comfort "at budget prices." These models cool, dehumidify, filter, and circulate with the selections made by a three-position switch.

Also included in the line for 1956 are a 3/4-hp. casement window and a 2-hp. model.

Suggested retail prices for the Custom models are \$379.95 for the RW-75C, a 3/4-hp. model; \$399.95 for the RW-100C, a 1-hp. model. Deluxe models are \$259.95 for the RW-50D, a 1/2-hp. model; \$329.95 for the RW-

75D, a 3/4-hp. model; \$369.95 for the RW-100D, a 1-hp. model; and \$439.95 for the RW-150D, a 1 1/2-hp. model. Special models are \$299.95 for the RW-75S, a 3/4-hp. model, and \$319.95 for the RW-100S, a 1-hp. model.

Suggested retail price for the 5AWC-75, a 3/4-hp. model for casement windows, is \$309.95; for the RW-200, a 2-hp. unit, \$479.95. The new electronic air cleaner, EAC-100, available as an accessory, carries a suggested list price of \$99.95.

NO TORCH!

NO TUBE CUTTER!

NO SAWING!

**THE EASIEST JOB
ON ANY COOLING SYSTEM...
servicing ALCO "T" series thermo valves!**

For cleaning, repair or capacity change: loosen two screws—raise the power element—lift out the cage. That's all!
You never break the connections.

Designers and Manufacturers of Thermostatic Expansion Valves; Evaporator Pressure Regulators; Solenoid Valves; Float Valves; Float Switches.

ALCO

see your ALCO wholesaler

ALCO VALVE CO.

engineered for service for life

853 KINGSLAND AVE. • ST. LOUIS 5, MO.

Contractor's History Shows Growth of Market for Cooling Products

This is the second of two articles on Electric Products, Inc. of Jersey City, N. J., a company which might well serve as an illustrative example of the history of the growth of the refrigeration and air conditioning industry, and the market for the industry's products.

By C. Dale Mericle

It's not surprising that Alex Fiedler, assistant sales manager of Electric Products, notes "a trend to increasingly complicated systems. Installations are getting more and more technical, so we need salesmen with considerable practical experience in refrigeration and air conditioning."

Evidently this contracting firm has done well on this, as well as other scores, for visitors from all over the world frequently stop in to spend several days or more with Electric Products personnel finding out

just what makes this company "click."

John H. Wister, sales manager for the company, acknowledges that the wide diversification of industry in the New Jersey area served by Electric Products has posed varied application problems for the firm.

"We have air conditioned candy packing rooms, installed ice-making systems for the dye industry and poultry processors, controlled humidity for painting processes by using refrigeration to wring moisture out of the air," Wister comments.

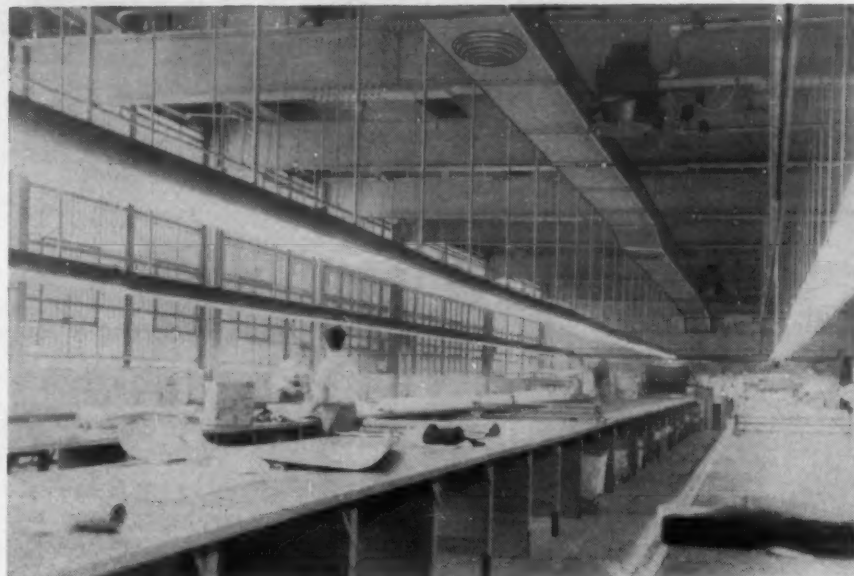
Air Conditioning Gives Better Control Over Mfg.

"More and more industries are finding that air conditioning gives them better control over their manufacturing processes," he adds. "This trend is opening broad new markets for air conditioning."

To provide the sales, engineering, installation, and service it does, Electric Products requires a large staff. It now numbers a hundred employees and has a fleet of 16 trucks.

And to combine the advantages of a large organization in providing sales, engineering, and installation background with the personalized treatment a smaller firm can give, Electric Products has helped establish service "depots" in nearby communities.

Among these are Bergen-



CLOTHING manufacturer's needs for comfort cooling to boost employee efficiency and filtering to keep garments clean was met by this Electric Products installation for Korby Sports Wear.

Passaic Service, Inc., in Lodi, N. J., with Arthur Gronoss as president, and Union-Morris Service, Inc. in Summit, N. J. with Thomas Bennechi as president.

A New York division of Electric Products is operated in Poughkeepsie, N. Y. as a full-fledged distributor by Charles Pankenier and Edward Stoll.

Firm Keeps Abreast or Ahead of Trends

Obviously, Electric Products has kept abreast of industry trends through the years, in some cases anticipating them.

In the matter of sales, for example, the firm in recent months has been pointing out to prospects some of the advantages of the liberalized write-off features incorporated in the 1954 revision of Federal tax laws. Further, the company has devised a financing plan that ties in with the accelerated depreciation method.

Three fundamental advantages to buyers are afforded: (1) immediate use equipment, (2) tax savings, (3) conservation of working capital.

In writing off new purchases with this method, monthly payments are actually less, after

Shows Method of Financing

Assume, for example, that the total installed cost of an air conditioning system is \$8,000 and Electric Products gets 20% down payment or \$1,600. This leaves a balance of \$6,400 to be financed. Financing charges on a five-year contract would amount to \$1,360, making a total of \$7,760 to be financed.

Under the graduated scale of monthly payments, the first year monthly payments would total \$2,607, but \$3,144.96 would be written off as depreciation. Each succeeding year the monthly payments are automatically decreased in accordance with the depreciated life of the equipment.

In the fifth and final year, monthly payments would be about \$40 a month with an adjustment on the last payment to balance out any remainder.

Changing patterns in distribution methods are also reflected in Electric Products operations.

Around the first of this year, (Concluded on next page)

HOT ideas...

Looking for new ideas that can help you reduce unit size, do a better cooling job or eliminate costly production operations? Here are two hot ones!

SIZZLER NO. 1



For smaller space-saving condensers that extract more BTU's use Wolverine Trufin*—the integral finned tube. Trufin is an extended surface tube with fins extruded from the tube wall. It gives you twice the heat transfer surface of plain tube—lets you design smaller condensers that do a bigger job. Trufin also provides constant efficiency. Because of the one-piece construction of Trufin, the fins never shake loose from thermal shock, vibration or varying pressures.

SIZZLER NO. 2

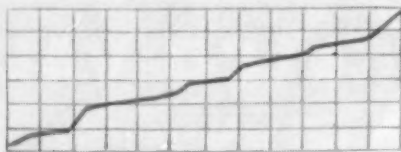
Reducing production costs by eliminating production steps is made to order through Wolverine's unique Spun End Process*. By spinning a length of tube in special dies, Wolverine—in one fast, economical operation—imparts a wide variety of contours with fully—or partially closed ends as required. Spinning does away with such mechanical steps as stamping, deep drawing, assembling and brazing. It's a natural for the production of driers, accumulators and strainers.



And there they are—two job-tested ideas that can help you build a better product. Get the complete story before placing your next order. Write today for Wolverine's Spun End Catalog. WOLVERINE TUBE, 1413 Central Avenue, Detroit 9, Michigan.

*REG. U. S. PAT. OFF.

GROWING UP WITH
THE REFRIGERATION
INDUSTRY!



WOLVERINE TUBE

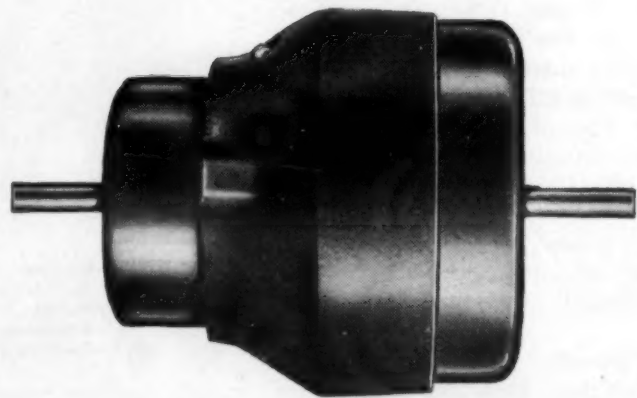
Division of Calumet & Hecla, Inc.

MANUFACTURERS OF QUALITY-CONTROLLED TUBING AND EXTRUDED ALUMINUM SHAPES

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES.

EXPORT DEPARTMENT, 13 EAST 45TH STREET, NEW YORK 16, N. Y.

SP-25: 4-POLE SHADED POLE MOTOR. 1/60-1/30 HP



Check these OUTSTANDING features

- ★ Thermally isolated oil reservoir for long lubricant life; contains 50 cc of special oil
- ★ Exclusive viscosity pump for coolest bearing operation
- ★ Polished cast iron bearing for extended motor life
- ★ Vertical or horizontal operation
- ★ Very low noise level.

Manufacturers of FHP AC motors for pumping and circulating uses, precision motor alternators.

FREE BULLETIN
SP-254

ELECTRIC MOTORS & SPECIALTIES, INC.

KING AND HAMSHER STREETS • GARRETT, INDIANA

Contractor --

(Concluded from preceding page)
a new firm called York-New Jersey Distributors, Inc., was established with Richard Hughes as president; Paul Hughes, vice president; Charles T. Kummerer, comptroller; and John Wister, sales manager, all of whom hold corresponding positions in Electric Products.

Firm Distributes Packaged Units

York-New Jersey is a strictly wholesale operation organized primarily to distribute York packaged equipment to dealers. "Packaged air conditioning," Richard Hughes believes, "has reached the acceptance stage, possibly even a saturation point, like the household refrigerator. The market is now a 'secondary' one to be reached by the local dealer."

"The future of packaged units is not with an air conditioning contractor like Electric Products selling a single 5-ton unit, but with the dealer, who can handle such jobs best," he says. "Multiple installations of packaged equipment are something different. These will still be sold, engineered, and installed by the large contractor."

Biggest Potential Lies In Home, Window Units

"Biggest potential of sales through York-New Jersey Distributors lies in residential air conditioners and window units. These can't be handled successfully in any quantity in today's market by a contracting organization," Hughes contends.

As an example of this new trend, he points out that one of York-New Jersey's better dealers is a "specialty dealer who formed an air conditioning sales division specializing in selling barber and beauty shops."

Another indication of Electric Products' expanding activities is its recent retaining of J. Lloyd Handy of Reid, Decker & Stocki, Inc., a Newark, N. J.

agency specializing in industrial marketing, sales promotion, advertising, and publicity.

It seems most likely that the organization headed by the Hughes brothers will have little if any difficulty in bettering its already highly respectable \$2,000,000 a year operation.

Mohawk Appoints Clarke to Post

CHADWICKS, N. Y.—W. K. Clarke has joined Mohawk Cabinet Co., Inc. as an executive in the sales department, the company announced recently.



W. K. Clarke

He was formerly associated with the Savage Arms Corp. as service manager in the Refrigeration Div. and in various sales capacities.

Clarke enlisted in the U. S. Navy in 1941 as an apprentice seaman and was released from active duty in 1945 with the rank of lieutenant (SG). He was subsequently promoted to lieutenant commander, USNR, and honorably discharged in October, 1954.

After his release from the Navy, Clarke entered Cornell university, graduating in 1949 with a BME degree. He then joined Savage Arms.

Tuthill Names Caney General Sales Manager

CHICAGO—A. L. Caney has been made general sales manager of Tuthill Pump Co., Chicago, according to James G. Tuthill, vice president.

Before joining Tuthill, Caney was district representative in the middle west for Diamond Chain Co. and earlier was assistant manager of engineering sales for Crane Co. prior to service with the air force during the Korean War.

Farm Journal Reports

Tests Show Farm Refrigerated Eggs Bring Higher Return than Others

PHILADELPHIA — Refrigerating eggs on the farm pays off —and handsomely.

So says a feature article in the May issue of the Southern Edition of *Farm Journal* magazine, which reports on a test run for an Experiment Station by a commercial poultry farmer, to find out how much different cooling really did make.

Some of the eggs were cooled with a mechanical refrigeration unit, some with an evaporative cooler, and the rest were left in open baskets in the feed room.

During the test (from April 4 to Aug. 1), the poultryman's 4,500 caged hens produced 644 cases of eggs. Prices ranged from 38 to 48 cents per dozen for "AA" eggs, 33 to 43 cents

for "A" large, 28 to 35 cents for "B," and 15 cents for "C."

Marketing every day on an "AA" market, as the poultryman ordinarily does, the 644 cases would have brought \$7,550 using the refrigerated cooler, \$7,069 with the evaporative cooler, and \$6,832 with no cooler.

"That means \$718 more money in four months from a home-made unit that cost about \$400 to build and about \$40 to operate," reported the agricultural engineer.

Most poultrymen sell on a Grade A market, but "the refrigerated cooler would have paid off there, too," states the magazine.

The gross receipts would have been from the three differ-

ent methods \$6,940, \$6,744, and \$6,608. Even if he had sold his eggs every three days instead of daily, on the Grade A market, the refrigerated eggs would have brought almost \$400 more than the unrefrigerated.

Research so far says that 55° is about the right temperature for storing eggs, it was noted. The mechanical cooler held an average temperature of 52°, the evaporative cooler 74°, and in the open feed room 77°.

"Nearly all eggs are Grade A when laid," *Farm Journal* points out, "but they deteriorate rapidly when not cooled."

During July, more than 85% of the egg production of the poultrymen running the test sold as Grade A from the mechanical cooler when he sold them daily. Only about 60% of the uncooled eggs made Grade A, and when held for three days the Grade A's dropped down to 45%.

To Keep Things COLD AND CUSTOMERS HAPPY



Today's customers are exacting in their demands when it comes to refrigerators and air conditioning units. They expect top performance from products that conserve space—fit right in with modern, streamlined living. Here are still more ways in which Wolverine helps you keep them happy.

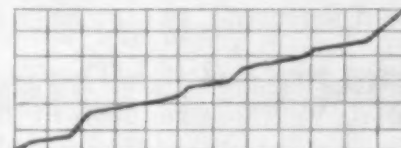
In copper refrigeration tube production, Wolverine pays particular attention to inside surfaces and diameters. The result is mirror-bright plug-drawn tubing giving assured, unimpeded flow to liquid and suction lines. Controlled atmospheric annealing insures tubing that is clean, dry, consistent in temper—Tubemanship-built—for years of trouble-free service.

Customers also demand streamlined, lightweight, finished products. Wolverine helps you by manufacturing quality controlled drawn and extruded aluminum tube and extruded aluminum shapes. If fabrication is necessary Wolverine provides facilities for finning, spinning, coiling, bending, flaring, piercing and drilling—to name but a few. Problems in alloys, design or fabrication are quickly answered by the skilled tubing technicians of Wolverine's Field Engineering Service.

Every time you specify Wolverine Tube you'll get products and services that will help keep your customers happy. You'll find profitable information in Wolverine's Fabricated Parts Book. Write for it today. WOLVERINE TUBE, 1413 Central Avenue, Detroit 9, Michigan.

Wolverine Trufin is available in Canada through the Unifin Tube Company, London, Ontario.

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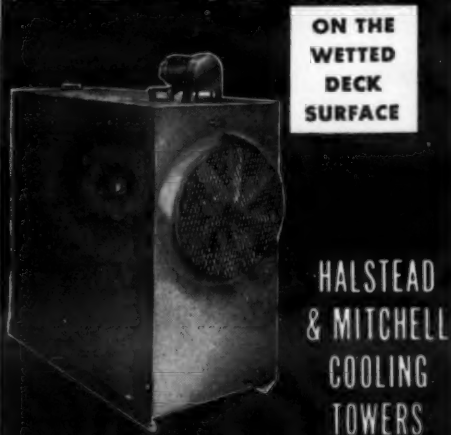
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How To Install the Lewyt Built-In Wall Air Conditioner



PICTURED here is how the Lewyt built-in wall air conditioner looks from inside a room. Mounted almost flush to the wall, controls are set at right. Just 32 in. wide, 14 in. high, and 15 in. deep, it looks like a radiator grille on its room side. Manufactured in 1/2, 3/4, and 1-ton units, it is designed for use in apartment houses, private homes, hotels, and factories.



AS SEEN from the outside of the building, the Lewyt unit is here, too, almost flush with the wall. The unit fits into a sleeve casing under a window or along any outer wall and is adaptable to various wall thicknesses.

Editor's Note: Expansion to nationwide distribution of the Lewyt built-in wall air conditioner (reported in the Sept. 26 issue of AIR CONDITIONING & REFRIGERATION NEWS) for sales to apartment houses, homes, hotels, motels, and factories brings with it a need for contractors and servicemen to learn installation methods. Therefore, the NEWS is publishing this picture story.



1 After deciding location for air conditioner, workman rules size of unit on wall, allowing about 1/4 in. over. Masking tape is then placed along ruled lines to help prevent chipping plaster. Saw is used to make opening for sleeve casing.



2 Plaster board is removed following the sawing.



3 Removing bricks with hatchet and chisel moves quickly after first brick is removed with aid of 1/4-in. drill.



4 Then workman spreads water-proof mortar seal on which sleeve casing will rest.



5 Next a cat (2 x 4) to which sleeve casing will be bolted is installed.



6 After sleeve casing is in place, tar paper is installed to form a vapor seal and act as insulation.



7 The next step is packing water-proof mortar seal around the sleeve casing. (Concluded on next page)



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Most modern chassis features. New suspensions; new, more rigid frames; tubeless tires standard on 1/2-ton models!

See your Chevrolet dealer for details. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

NEW CHEVROLET
Task-Force TRUCKS

For more information about products advertised on this page use Information Center, page 18.

Lewyt--

(Concluded from preceding page)



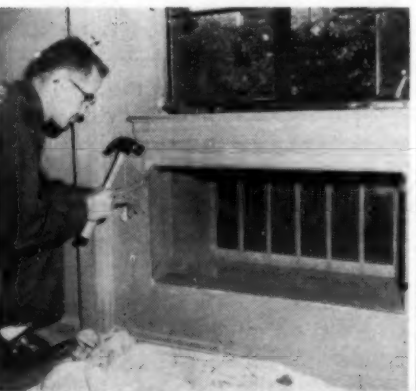
8 Moving inside now, the installer bolts the sleeve casing to the cabinet.



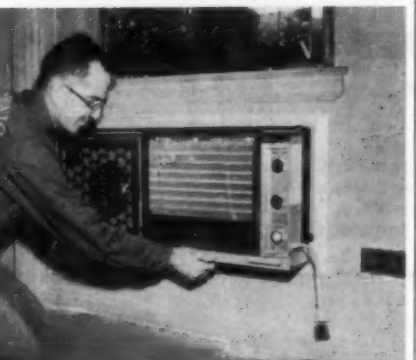
9 Then tar paper is inserted in space around the casing to provide more insulation.



10 Filling is then added over tar paper to help complete seal.



11 Molding is placed around sleeve casing to give neat finished appearance to installation.



12 As a final step workman slips Lewyt air conditioner into sleeve casing, thus completing installation of the built-in wall-type air conditioner. Note that electric wall outlet has been provided 6 in. from location of air conditioner.

Air Conditioner for Iron Lung Designed By Pyle-National Engineer, Hospital Aid

CHICAGO — Successful air conditioning of an iron lung has been accomplished by Edward Kurek, chief "Multi-Vent" engineer of the Pyle-National Co. and Tohru Inouye, research assistant at a local hospital.

Inouye, a Stanford university graduate of Japanese descent, began the experiments about two years ago after noticing the suffering of patients near heat exhaustion while confined to the lung on hot days.

The air cooling system consists of a 1/3-ton compressor and motor of the type used in window air conditioners. It is water cooled to prevent overheating in the room.

Tubing carries the refrigerant to the low velocity air diffuser in the top of iron lung, where two fans blow across the tubes.

The air then passes through a Multi-Vent panel containing thousands of tiny holes.

According to Inouye, the "Multi-Vent" air diffusers had the characteristics he sought for the delicate job of air diffusing inside the lung—low air velocity, high number of air changes, and even distribution of the air.

At the suggestion of Inouye, Kurek redesigned a Pyle-National air diffuser to a convex shape to fit into the curved inner side of iron lungs. Kurek went one step further and designed the ducts and air conditioning unit for the iron lungs.

According to Inouye, the principal heat factor in the respirators is the body, which generates 400 B.t.u. under normal conditions. These heat units increase substantially when body

temperature rises, as with polio and other respiratory diseases.

In extreme summer heat the temperature inside the lung is equal to or slightly higher than the outside temperature. The air conditioning system controls the temperature inside the lung to any desired degree.

Inouye believes that in addition to the value of air conditioning for patient comfort in the lung, this research has opened the door on great therapeutic advantages to the patient. He said:

"It is too early in the experiments to tell whether air conditioning is actually able to reduce fever damage to the nervous system, but there are indications that this is true."

Inouye expressed the hope that air conditioning will become standard equipment on iron lungs. He said his research and experiments on iron lungs and air conditioning will continue.

H. Schultz & Sons Is York Distributor

YORK, Pa. — H. Schultz & Son, Inc., Newark, N. J., has been named distributor for York Corp., it was announced by J. Keith Loudon, vice president and general manager, Commercial Div.

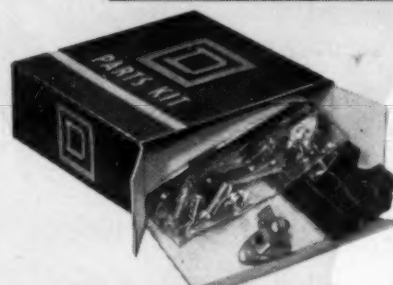
The York franchise provides for the wholesaling of room air conditioners by the Newark firm in the northern New Jersey area.

H. Schultz & Son was started in 1921 as Prince Range Co. doing both retail and wholesale business. In 1946, H. Schultz & Son, Inc. was formed as the wholesale company. It business has two divisions, housewares and appliances.

President of the firm is Sam Schultz. Herman Charnak is controller and Harry Jacoby is sales manager.

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with **PACKAGED** MOTOR STARTER PARTS!**INTERLOCKS**

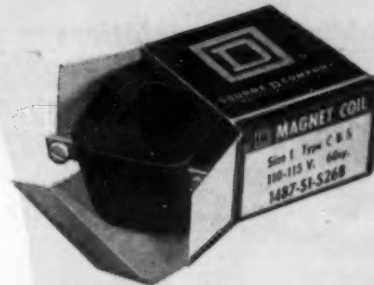
A wide variety of quick-change, front-mounted interlocks adds flexibility for special applications

**CONTACTS**

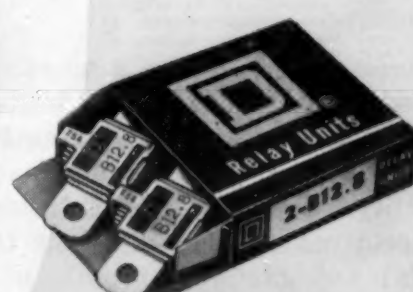
Packaged replacement contacts are easily installed without disturbing wiring

**PUSH BUTTONS AND SELECTOR SWITCH**

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**COILS**

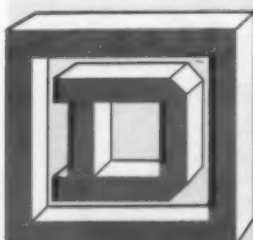
Screwdriver is only tool required for quick change of magnet coil to accommodate different voltages

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VOLUME 76, No. 14, SERIAL NO. 1,394, DECEMBER 5, 1955

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.

**OFF THE CHEST**

Kuhlanlagen, Kuhlshranke
Und Warmetchn, Apparate
Zurich 11/50, Switzerland

Editor:

I enjoy reading your paper, especially "Inside Dope."

You might know the following stories, if not, change them in to good American English, and put them in your "Inside Dope," if you find them worth while.

A German Land Proprietor was shown around by a swiss farmer, when he exclaimed at the end of the tour: "You know, it takes me three days to get around the frontier of my estate using a car," and the swiss replied, "well, I too had once a car like that. . . ."

An employee asked his boss for a raise of salary, saying

"you know with what you give me, I cannot make big jumps." The boss replied: "Please realize that I engaged you as a Book-keeper, and not as a goat."

ALBERT STAEHELI

H. E. Hardeman
Refrigeration Service and
Air Conditioners
Borger, Texas

Editor:

Congratulations on your editorial stand on the Eisenhower brothers.

And we sure do not need any more of those "Give 'em hell, Harry" kind of politicians in power.

Your "Inside Dope" column is always and all ways interesting.

HOMER E. HARDEMAN

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Why the Big Boys Are Gambling Smartly

(Concluded from Page 1)

heavily on the future. And who are these optimists? Answer:

THE BIGGEST CORPORATIONS.

During the last few years, when so many have been fearing that "the bottom will drop out of things," two phenomena have contradicted the pessimists:

(1) Giant corporations have been spending billions to build new factories, enlarge research facilities, acquire staffs of marketing experts, and to advertise.

(2) **Middle-size corporations**—sighting the same pot of gold at the foot of the rainbow—have been MERGING at an increasingly rapid rate. Reason: only by so doing can they acquire the capital, credit, and brains to expand and compete with "the Big Boys."

Just as we cannot say that the pessimists are wrong; likewise we can't depreciate the optimistic actions of America's biggest corporations, and those smaller businesses which are merging to become large enough to survive.

Big business does not have a monopoly on brains. But it can and does pay highest prices for talent in any category—executive, creative, scientific, productive, diplomatic, and "personality." So, when these extremely well paid executives (advised by their top-drawer staffs) are gambling heavily on a coming BOOM, all of us should take heed.

Obviously, there must be excellent reasons why such industrial colossi as General Motors, General Electric, Chrysler, Westinghouse, Ford, DuPont, Carrier, American Motors, Borg-Warner, Philco, U. S. Steel, Dow, Reynolds, Monsanto—to name but a few at random—are placing such tremendous bets on the potential ZOOMING of our economy.

What do they foresee that the pessimists have overlooked? Here's what we have learned from friends in those corporations:

(1) A population EXPLOSION is due in the 1960's.

(2) A Second Industrial Revolution—based on scientific "breakthroughs" which already have produced the beginnings of automation plus atomic and solar power. This Second Industrial Revolution is gestating an unbelievable variety of upcoming

products which now are on drawing boards and moving toward fruition in laboratories.

(3) A fascinating new factor in the formula for economic health: LEISURE. (This is an original theory of our own.)

Let's examine them in reverse order.

(3) That brand-new *leisure* factor in economics (which this writer thinks should be integrated with the age-old factors of supply and demand, capital and labor, distribution of wealth and velocity of its circulation) is so abstruse and involved that it would be better to discuss it subsequently (which we shall do).

(2) **Scientific "break-through,"** like automation and fabulous electronic and power developments, already are being utilized by giant and recently-merged corporations to cut costs and improve quality. Furthermore, we are in the babyhood of this Second Industrial Revolution, which should upgrade living standards even more startlingly than did the First Industrial Revolution (pinioned on steam, electricity, and machine tools). As for new products, a top General Motors executive has predicted: "Dozen years from now more than 40% of our working force will be turning out consumer goods which aren't on the market today."

(1) EXPLOSION is the only word which can describe what will happen to our Census Bureau figures in the 1960's. In the early 1940's babies were born at an unprecedented rate in these United States. Ever since the birthrate has remained high while the death rate continually is lowered. Come 1960 these 1940-plus babies will get married. Immediately, it is presumed, they will start big families of their own, want and get new homes, autos, kitchen appliances, air conditioning, and all the fabulous new gadgets which will be available in the 1960's.

Those are reasons why the "Big Boys" are betting BIG MONEY on America's future. They are preparing now for what they honestly believe will be a greater Boom than most of us modest mortals now can imagine.

Shouldn't we all take a cue from their optimism? Shouldn't we all look forward to a much bigger future?

Folder Discusses Air Conditioning Features

—KEY NO. Q-1210—

SYRACUSE, N. Y.—Air conditioning's contribution to greater profits and year-round high quality production for garment manufacturers is described in a special folder prepared by the Carrier Corp.

The illustrated pamphlet discusses important features provided by air conditioning. For example, one New York City producer increased summer output by as much as 25% due to improved efficiency of employees after a system controlling indoor temperature and humidity was installed, according to the folder.

A fresh, filtered inside atmosphere cuts soilage from perspiration, dust, and dirt, it is noted. More comfortable working conditions attract skilled labor and absenteeism is sharply reduced.

These and other advantages provided by a single air conditioning system maintaining year-round climate are explained in the new folder. In addition, representative garment manufacturers from scattered areas briefly relate their own experiences.

Bulletin Explains Soldering, Fluxes

—KEY NO. Q-1211—

WAUKEGAN, ILL.—A two-page information bulletin explaining various types of soldering and action of various types of fluxes has been issued by Pfanzstiel Laboratories.

Suggestions for successful soldering are given, together with recommendations for proper selection of fluxes and their proper application in such operations as soldering on stainless steel, and on vertical surfaces.

3-Color Booklet Describes Vic Line

—KEY NO. Q-1212—

MINNEAPOLIS—Vic Cleaning Machine Co. here recently offered a three-color booklet on its 81 series refrigeration equipment, it was reported.

The booklet presents pictures and detailed descriptions of Vic's air-cooled refrigerated solvent cooler, air-cooled water chiller, heat exchanger, and water saver and temperature regulator valve, according to the firm.

Folder Describes Alloys, Solders

—KEY NO. Q-1213—

WHITE PLAINS, N. Y.—"How to use and apply All-State alloys and fluxes for welding, brazing, soldering, and cutting steel" is the title of a new folder issued recently by All-State Welding Alloys Co., Inc. here.

The folder describes the firm's 22 alloys and six silver solders and aids in the quick selection of the right alloy and its companion flux for a particular job.

Catalog Covers Built-In Equipment

—KEY NO. Q-1214—

BALTIMORE—A new catalog covering cabinets for built-in equipment recently was issued by Beautycraft Kitchens Div. of Miller Metal Products, Inc. here.

Illustrations, sizes, and model and catalog numbers are shown for built-in single and double ovens, ranges, and refrigerators. Cabinet catalog number, model, and make for built-in electric and gas ovens and ranges are listed in the catalog.

Brochure Illustrates Wall Air Conditioners

—KEY NO. Q-1215—

LONG ISLAND CITY, N. Y.—A new brochure describing the features of recently developed Amic built-in-wall air conditioner has been published by Amic Mfg. Corp. here.

The four-page, two-color brochure has illustrations and specifications of the decentralized individual units.

Trane Literature Covers Line of Fluid Coolers

—KEY NO. Q-1216—

LA CROSSE, Wis.—New literature on its line of fluid coolers has been announced by The Trane Co., manufacturer of air conditioning, heating, ventilating, and heat transfer equipment. A new 8-page, illustrated bulletin describes Trane dry type fluid coolers, units developed specially for economical liquid or gas cooling. Available in two models, in a complete range of sizes, Trane dry type fluid coolers

use air as a cooling medium and are especially useful in areas where water is scarce.

The bulletin contains complete information on the construction, performance, and maintenance of the units, as well as data on each of their component parts. Illustrations and descriptions of actual fluid cooler applications, including gas compressor intercooling, jacket water and lube oil cooling, are also contained in the catalog.

Creamery Package Catalog Published

—KEY NO. Q-1217—

CHICAGO—A new 132-page catalog of dairy and food processing equipment and supplies has been published by The Creamery Package Mfg. Co. of Chicago.

The catalog is designed as a complete buyer's guide to products ranging from ammonia accumulators to washing compounds. Some of the newest items in the field such as the latest CP "Milk-keeper" bulk milk tanks are included in the comprehensive book.

Booklet Explains Building Program

—KEY NO. Q-1218—

CHICAGO—Building Construction Employers Association of Chicago, Inc. has published a booklet titled "True Efficiency In Building" as an aid for those contemplating construction.

Among other things, it contains a check list which serves to point out every phase of construction. It answers 20 questions on building programs, such as when to build.

Copies may be obtained from H. Mayne Stanton, executive secretary of the association, 228 N. LaSalle St. here, according to the announcement.

Manual Discusses Hot Water Heating Systems

—KEY NO. Q-1219—

CHICAGO—A new 28-page application manual for high temperature high-pressure hot water heating systems has been pub-

lished recently by C. A. Dunham Co. here, this manufacturer of heating and cooling equipment announced.

Manual No. 2685 discusses high temperature high-pressure hot water heating systems including design, installation, and maintenance data.

Drawings, charts, graphs, and tables amplify the text, the firm said.

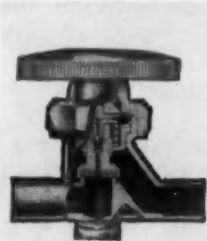
Valves Illustrated In 2-Color Catalog

—KEY NO. Q-12110—

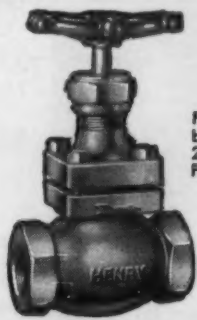
CHICAGO—Eighth edition of Cyrus Shank Co. ammonia valves and refrigeration products catalog, in two colors, was recently issued by the company.

Illustrations, drawings, specifications, and features are included in the catalog.

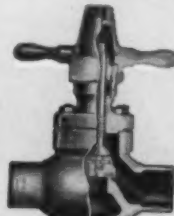
It describes semi-steel and bolted bonnet shut-off, semi-steel expansion, tee, all-steel line and purge and needle point, relief, and three-way valves, and all-steel gauge sets.



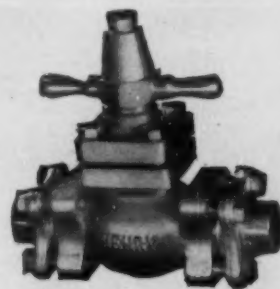
PACKLESS VALVE
With balanced-action.
Sizes 1/4" through 3/4"
Fl., 1/4" through 1 1/2"
O.D.S.



AMMONIA VALVE
Forged steel or semi-steel
bodies. Sizes 1/4" through
2 1/2" F.P.T., 1 1/4" through 6"
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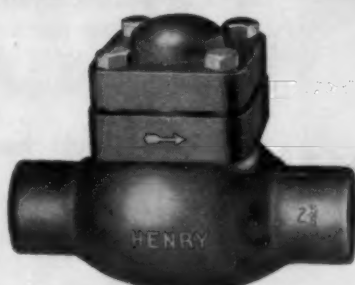
STRAINER
Angle type with patented distortion-type flange. Sizes 3/8" through 4 1/2" O.D.S., 2 1/2" through 4" butt weld.



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Valves are backseating—diaphragms may be inspected or replaced without loss of liquid. Conforms with all safety code requirements. Also packed types, capped or with hand wheels.



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Piston Type For Freon. Sizes 1/2" through 4 1/2" O.D.S.



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Cartridge type 12 to 500 cu. in. capacity. Sizes 3/8" to 2 1/2" O.D.S.



DRIER
Large diameter and capacity. All brass construction. Minimum pressure drop.



DIAPHRAGM RELIEF VALVE
Operates independently of outlet pressure permitting use of rupture disc assembly on outlet side without increasing initial leak pressure. Forged brass bodies. Sizes 3/8" & 1/2" I.P.S., 1/2" & 3/4" O.D.S.



STRAIGHT-THROUGH RELIEF VALVE
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HENRY VALVE COMPANY

MELROSE PARK, ILLINOIS Chicago Suburb

Cable: HEVALCO MELROSE PARK, ILLINOIS

Hermetic Rebuilding Plants Employ Production Line Techniques (2)



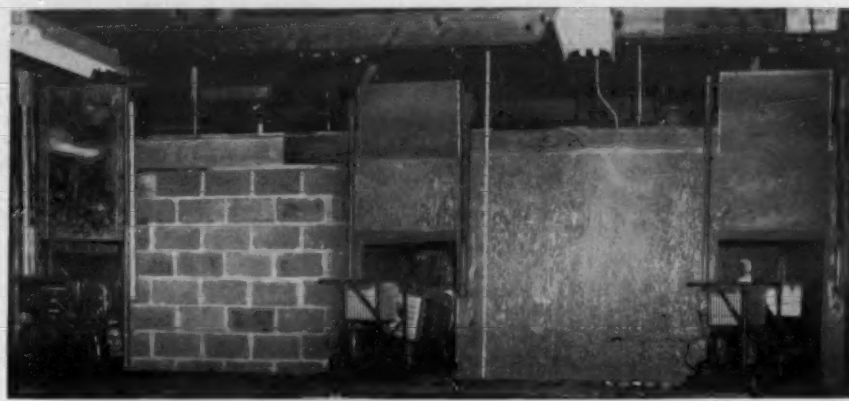
RUN-IN tests are performed overnight after systems are repaired. Racks at both Guaranty (above) and Kelmor can accommodate 150 units apiece.

This is the second instalment of an article describing the hermetic system rebuilding plants operated by Kelmor Refrigeration Service, Inc., of Newark, N. J. and Guaranty Service, Inc., of Orange, N. J. The third and final instalment will deal with the field service work of the firms.

board design are made by Kelmor. Latest design worked out by Manning is a rather elaborate arrangement that permits wide flexibility in both testing and charging systems.

This board is piped with "Freon-12," "Freon-22," oil, nitrogen, and methanol, as well as being connected to the vacuum system. Through a combination of 21 hand valves,

Following dehydration, sealed systems are charged with refrigerant and oil at one of the charging boards (one for each conveyor line). The boards are equipped to charge both oil and refrigerant in charges of 1/2 to 55 oz. of refrigerant and 5 to 1,700 c.c. of oil. Refrigerant is kept under pressure by 500-watt electric strip heaters strapped on the cylinders, which are thus kept at about 130° F. Oil is kept under pressure by dry nitrogen. Constant changes in charging



CHECK for quietness of operation is made in special room after over-night run-in. Here also a final check is made for leaks using both an electronic leak detector and "black light" which shows up traces of oil.

gauges, and automatic switches, complete checks can be run quickly on sealed units.

After the repaired unit has been fully charged with refrigerant and oil, it is operated over night on the conveyor stands. There are enough electrical connections and space on the conveyor to accommodate 150 units per 24-hour period at each plant.

Excess oil and soldering flux that may have gotten on the unit during repair work are removed.

All painting is done in spray booths equipped with explosion-proof lighting and electrical fittings. Forced air ventilation provides two air changes per

(Continued on next page)



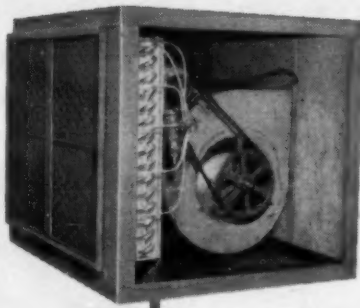
TYPHOON WATERLESS Air Conditioning

2-3-5-8-10 TON WATERLESS UNITS

New air cooled units, easy to install, need no plumbing



When water is short, impure, costly — or where sewer tax is a problem — you can handle the job easily and economically with a Typhoon waterless air-cooled condenser. Units are easy to install and require little or no maintenance... deliver full capacity in hottest weather... give you a powerful selling plus! Round out your line with Typhoon waterless air conditioners—full range of sizes up to the exclusive 10 ton unit.



Superior Typhoon Engineering:

Centrifugal blower eliminates wind resistance factor, overloading of fan motor... adaptable to duct work.

Bigger condensing surface—more cooling capacity with less electrical input.

Self-contained or remote installation—for most advantageous positioning.

Non-stop performance even in hottest weather because compressor is never over-loaded.

Quiet—slow speed blower with belt-driven, ball-bearing drive cuts noise level.

Weatherproof design—all components housed inside cabinet for outdoor installation by refrigeration contractor.

TYPHOON

Specialists in Air Conditioning Since 1909

Typhoon Air Conditioning Co., Inc.
505 Carroll St., Brooklyn 15, N. Y.

I'd like to know more about selling Typhoon Waterless units. Send me Bulletin A-5.

Name _____

Address _____

City _____

Zone _____ State _____

Specialty Designed Bags Aid In Checking Units

During conditions of high ambient temperature and relative humidity, specially designed bags are placed around the evaporators to give a more accurate check on how the units are performing.

If the unit passes the over-night test, it is then ready for noise and leak tests as well as final inspection prior to spraying.

Noise test is conducted in an insulated room. Here the unit is run and checked to make sure its noise level falls below the maximum decibel rating established by the manufacturer.

Leak Tests Made In Room With 100% Fresh Air

Leak tests are conducted in the same room, which is supplied with 100% fresh air to avoid contamination from refrigerant vapor likely to be present in the repair shop.

Both a G-E Type H electronic leak detector and a G-E "black light" lamp are used in leak tests. The black light is employed to check units for the presence of oil on the outside of the sealed system. Leaking "Freon" also carries with it a certain amount of oil, which can be readily detected with the black light.

When a unit has been pronounced okay after the noise and final leak tests, it is readied for the refinishing operation.

NOLIN Moisturizer
VEGETABLE CASE

AVAILABLE IN 5' - 8' - 10' SIZES

If It's Not a NOLIN, It's Not a MOISTURIZER

NOLIN MANUFACTURING COMPANY
1400 LLOYD ST. PH. LD 57
MONTGOMERY, ALABAMA



SIGHT GLASSES for Air Conditioner Refrigerant Systems

Quick visual checks on refrigerant can be made with Pyrex sight glass installed on the liquid line. Shows under or over charging, speeds servicing. Write Glass Division.

SWIFT
Lubricator Company, Inc.
1 Glass St., Elmira, N.Y.

ROTARY SEAL

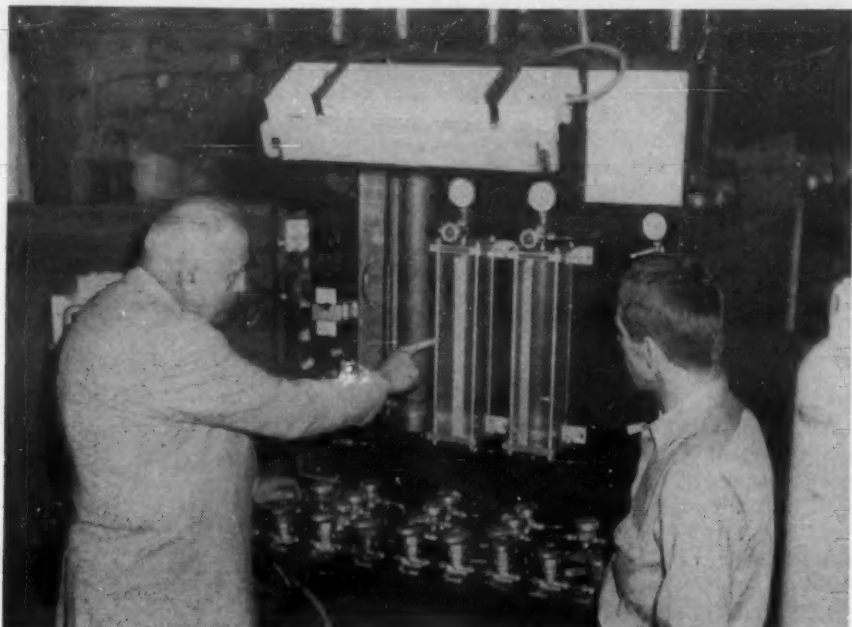
Replacement Units

Available in a wide size range for Commercial, Semi-Commercial, Air Conditioning and Home Refrigerators.

EASY TO INSTALL * ECONOMICAL



2026 NORTH LARRABEE STREET
CHICAGO 14, ILLINOIS, U.S.A.



NEWEST charging and test stand designed and built by Al Manning (left) is piped with "Freon-12," "Freon-22," oil, nitrogen, and methanol, and is connected to vacuum lines. Combination of 21 hand valves plus gauges and automatic switches permits quick, complete tests and charging of sealed units.

Sept. Wholesaler Sales Top Last Year by 23% 9-Month Volume Rises 13%, Census Figures Show

WASHINGTON, D. C.—Sales of air conditioning and commercial refrigeration equipment distributors in September topped the year-ago level by 23% but declined 17% from August, according to the Bureau of the Census. Their sales for the first nine months of 1955 were 13% higher than in the like period of 1954.

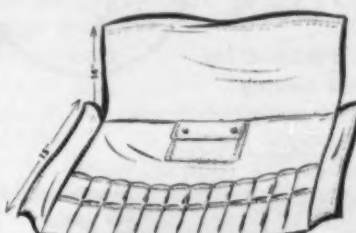
September sales of distributors of electrical appliances, TV and radio sets and parts, and electronic equipment and parts were up 12% from the same month of last year and 3% better than in August. For the first nine months of the year, their sales gained 11% compared with the corresponding year-ago period.

Inventories of the air condi-

tioning and commercial refrigeration equipment distributors at the end of September increased 18% from a year earlier and 1% from Aug. 31.

September sales of all types of merchant wholesalers as a

group averaged 1% higher than in August and 13% above September a year ago. Cumulative sales for the first nine months in 1955 were 10% higher than in the comparable period of 1954. Sept. 30 inventories rose 1% above the stock level of a month earlier and were 6% above stocks on hand a year



AMPLE TOOL CAPACITY

HANDI-ROLL COMPANY

19934 Biltmore, Detroit 35, Michigan

Jobber Inquiries Invited

CARRY YOUR TOOLS THE EASY WAY

Here at last is a convenient and practical way to carry hand tools. The Handi-Roll indexes your tools, keeps them at your finger tips. It rolls into a compact unit with the special Handi-Roll carrying handle and locking strap.

The Handi-Roll contains 24 pockets to hold tools 12" over-all and shorter. A separate pocket with a locking flap is provided for sockets, etc. Made of sturdy, waterproofed duck, the Handi-Roll will give long, useful service.

ORDER NOW!

ONLY \$5.95

Check or Money

Order. Postage

Prepaid.



EASY TO CARRY

Hermetics --

(Continued from preceding page) minute in the booth. DeVilbiss spray equipment is used throughout, separate spray guns being employed for each color to eliminate change-over time. Painted units and systems are baked in an infrared oven.

Incidentally, they spray a rubber coating on the walls of the spray booth.

"About once a month we just peel off this rubber coating and the paint that has accumulated on it," Manning says.

After painting, the completed sealed systems move to the crating department where they undergo a final leak test and are crated either for immediate shipment or for warehouse storage.

(To Be Continued)

Pittsburgh Corning Names Walter Lovett To Manage New Dept.

PITTSBURGH — The Pittsburgh Corning Corp. has announced the appointment of Walter Lovett as manager of its newly-created technical service department.

The department was established to provide prompt technical assistance to customers and prospects for its two products, PC glass blocks and "FOAMGLAS."

In addition, it will coordinate information from Pittsburgh Corning's research and development divisions, and will review and prepare technical information for the company's sales engineers.

ASPIR-JET SPRAY NOZZLES RAISE TOWER EFFICIENCY

The swirling, atomizing action of the water as it goes through the Aspir-Jet means more effective heat transfer and higher efficiency from any spray-filled cooling tower. Pressure as low as 1/2 pound gives effective water break-up and distribution. Formed of butyrate plastic, Aspir-Jets will not corrode.



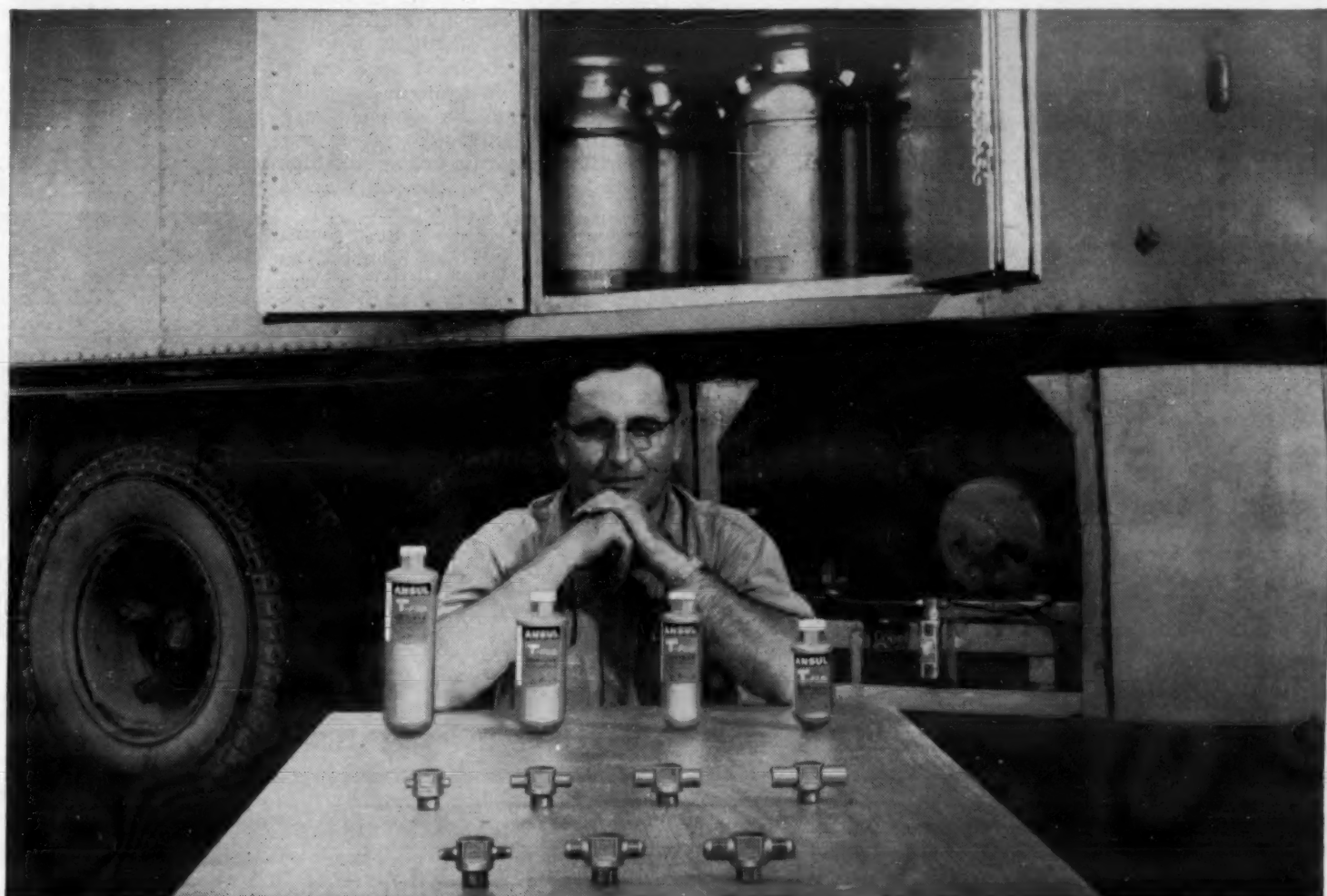
• Available through Refrigeration and Air Conditioning Wholesalers.

Manufacturers & Refrigeration Wholesalers: if you are not now using or stocking this astounding new product, wire or write

THERMAL AGENCY

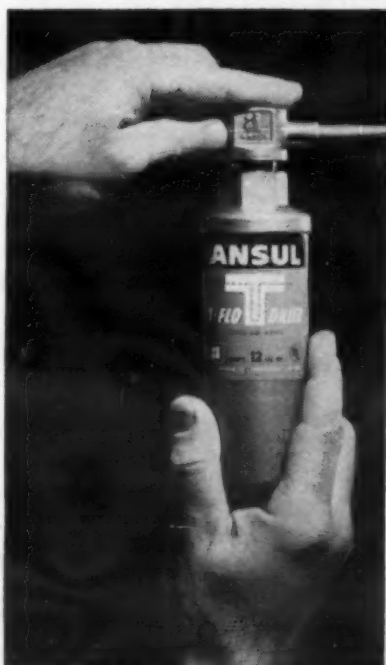
National Sales Agents

1515 DALLAS • HOUSTON, TEXAS



Shown with the Ansul Drier Line is Lawrence Julian, supervisor of refrigeration maintenance at the Twin Pines Dairy, Michigan's largest independent dairy.

Ansul's unique T-Flo Design can simplify your drier problem, too



You can replace the T-Flo Cartridge without breaking the line.

With forty-five refrigerated dairy trailers on the go and numerous plant refrigeration units to service, Lawrence Julian just doesn't have time to waste on complicated drier installations. Ansul T-Flo Driers and T-Connectors have been a big help in simplifying his drier problems.

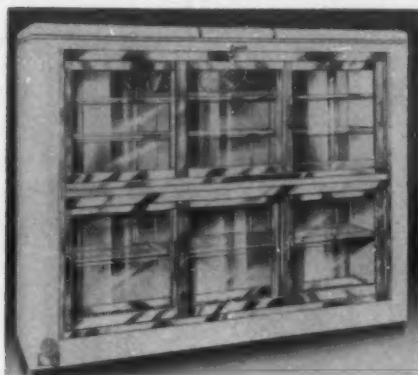
Once one of the 7 Ansul T-Connectors is permanently placed in the liquid line, you can install any one of the 4 Ansul T-Flo Drier Cartridges (see above). These 11 parts, 7 fittings and 4 driers, give you 28 possible installation combinations. Here is flexibility that no other drier can match. It will save you valuable time on every job.

At the same time you cut your inventory of driers and drier fittings, too.

Changing an Ansul T-Flo Drier is the easiest thing in the world. Remember, line breaking is not necessary. Just unscrew the old drier, replace with the new. Hand-tightening will give you a leakproof seal. You can install the T-Flo Drier in any position—up, down or sideways.

Be sure to ask your wholesaler about the new Ansul Dry-Eye Connector that tells you by color if the refrigerant is wet or dry. It's another Ansul time-saver that you won't want to be without. The ANSUL CHEMICAL COMPANY, Dept. D-13, Marinette, Wisconsin.





Howard Announces Wall Display Case Line

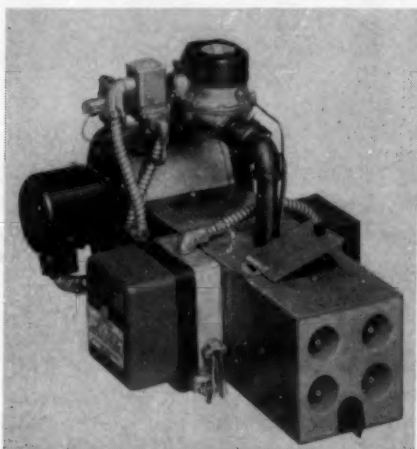
—KEY NO. E-1214—

PHILADELPHIA—Howard Refrigerator Co. has announced a new line of wall display cases which are claimed to permit greater bottle and dairy goods merchandising in a smaller percentage of floor space.

The company said a wide range of sizes to meet every operating need are offered in the new RWC line, including models 4½ ft., 6 ft., 8 ft., 10 ft., and 12-ft. long with respective capacities of 45, 65, 90, 120, and 144 cu. ft.

All models are finished in white porcelain on steel interiors, with adjustable heavy-duty, bright plated wire shelving, with fluorescent flood lighting throughout. The doors are stainless steel with hermetically-sealed glass units protected against sweating.

Exteriors are one piece stampings with rounded corners, ends, and top, and come in either all-porcelain or stainless steel.



Packaged Gas Burner Developed by Mettler

—KEY NO. E-1215—

LOS ANGELES—A new packaged gas burner, which operates with air from a low-speed fan or natural draft, has been developed by The Mettler Co., Inc. here for conversion of small boilers, furnaces, and process heating equipment.

The Mettler model 4F-R is a completely automatic packaged unit. Bronze or stainless steel jets can be replaced to boost or reduce the B.t.u. input within a wide range. For example, the 4F-R has a range between 300,000 and 600,000 B.t.u. (minimum at 5 in. water column pressure) which can be brought down to as low as 100,000 B.t.u. by replacing the four jets in each burner port.

Standard specifications include fully assembled motorized mechanical draft automatic burner, with multiple removable-type orifices, four-port, low-pressure manifold, and one-piece refractory facing.

Combustion air is supplied by a low-pressure, non-overloading fan, with neutral furnace conditions and a maximum of .5-in. W.C. wind box pressure.

All valves, motorized fan, air register, control mechanism, pilot, and gas pressure regulator, plus electric starting and operational relays are included in the burner "package," which is ready for application to boiler or furnace when electrical and gas connections have been hooked up.

Remote Condenser Air Conditioner Developed

—KEY NO. E-1216—

MILWAUKEE—A new "Weatherwise" air conditioner, with the remote-type condenser placed in attic, rooftop, or garage, was announced recently by Aug. G. Barkow Mfg. Co., Inc. here.



Designed to blend into the architecture, the manufacturer said, the air-cooled unit is suitable for residential or commercial application. The remote condenser is connected to the compressor unit in basement or utility room by self-sealing fully-charged lines. Coupling connectors on either end permits installation without field charging, the company reported.



Beckman Produces Leak Detector

—KEY NO. E-1217—

FULLERTON, Calif.—Beckman Div., Beckman Instruments, Inc. here, is now offering air condition-

ing and refrigeration equipment manufacturers a new quality controls instrument designed to "ferret out even the tiniest leaks" in sealed compressor units, condenser and evaporative coils and valves.

The new Beckman leak detector is "a compact, extremely sensitive mass spectrometer that identifies gases by their molecular weight," the company said. "In this case, the instrument is tuned to respond only to helium—a safe, inert, sampling gas with a fast instrument response."

"Operation of the instrument is simple and safe. The helium is introduced into the system or component to be tested or sprayed over the system's surface. If there is a leak, the helium will be detected by the leak detector which is sensitive up to one part of helium in 700,000 parts of air. Audible and visible warnings instantly pinpoint the location of the leak."

"The leak detector is mobile, built to withstand rugged use," it was announced.



WATER - COOLERS ICE MAKERS

... rust, dirt chlorine taste
... service breakdowns due to rust & sludge

Insures service satisfaction for all coolers, ice-makers! Clear, taste-free water... crystal ice... every day... in all locations.

FILTRINE MFG COMPANY
53 LEXINGTON AVE. • B'KLYN 38, N. Y.

WATERLESS AIR CONDITIONING OPENS DOORS TO MORE SALES



AIRTEMP Waterless "Packaged" Units create big new opportunity for profit-minded dealers everywhere!

Looking for a greater opportunity to sell more "packaged" air conditioning—without adding manpower, without increasing your selling costs in any way? Here's how Airtemp Waterless Air Conditioning can give your business this "shot in the arm"...

➤ Airtemp 100% waterless operation makes it possible to sell prospects located where water is restricted in summer or too expensive for air conditioning.

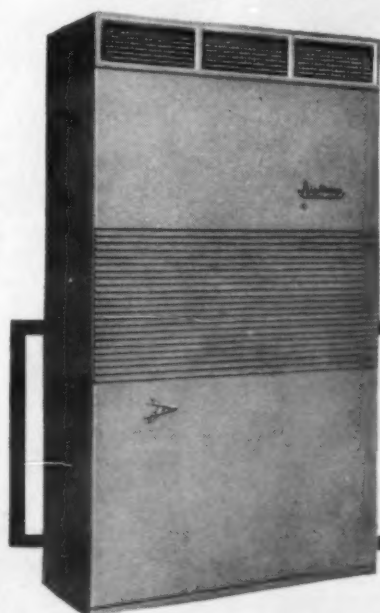
➤ Lower cost of installation with Airtemp waterless equipment (no plumbing, no cooling towers or water-savers) gives you a vital competitive price advantage.

➤ Unmatched flexibility of installation designed into the big Airtemp line of waterless equipment provides a ready answer to every application problem—helps you save valuable man hours—lets you handle more jobs without adding manpower.

Airtemp was the pioneer of waterless air conditioning—still sells more waterless units than any other manufacturer. This established leadership, combined with the confidence people have in any product which carries the famous Chrysler name, makes Airtemp waterless the easiest-to-sell brand you can handle today.

See Your Airtemp DISTRIBUTOR!

Your nearby Airtemp Distributor is a specialist in "packaged" air conditioning—both waterless and water-cooled. He has the knowledge, resources and facilities necessary to give you solid help every step of the way to a more profitable future in air conditioning. Call him—or write to Airtemp Division, Chrysler Corporation, Dept. AC-12, Dayton 1, Ohio, for complete details of the Airtemp Franchise.



AIRTEMP
BUILDS AIR CONDITIONING
FOR EVERY
BUSINESS REQUIREMENT



THE
FORWARD LOOK
IN
AIR CONDITIONING

the really complete line for '56!

Airtemp gives you a big choice in both waterless and water-cooled "packaged" air conditioners. 13 sizes from 2 H.P. to 30 H.P.

Pictures from Bottlers Show

(Editor's Note: Pictures on these two pages were taken at the 37th annual meeting of the American Bottlers of Carbonated Beverages held recently in Miami, Fla.)



SIX FLAVORS of bottled beverages with bottles released from individual trays and not from a central location can be vended from La Crosse Cooler Corp.'s new "Bev-Serv 14" upright coin operated selective dispenser, Larry M. Harris, (r.) field sales supervisor for La Crosse Cooler, explains to Roy J. Fullmer, Coca Cola Bottling Co. of Alliance, Ohio.



IN ADDITION TO PRE-COOLING 42 bottles in door shelves, the new Mills Industries, Inc. "Select-Vend" will dispense 123 bottles in 6, 8, or 10 oz. sizes, Dick Minges (l.) of Pepsi Cola Bottling Co., Fayetteville, N. C. learns from J. W. O'Connor of Mills sales department.



EXPLAINING HOW THE "Choice Vend" vendor dispenses four flavors completely automatically, Lowell Almy (r.) Clearwater, Fla. district manager for Choice Vend, a division of Central Tool Co., Inc. of Hartford, Conn., gives M. E. Holmes of the Nehi Bottling Co., Kosciusko, Miss. a look inside.



GATHERED AROUND the Kol-Flo Kooler Co.'s new all stainless steel syrup cooler, which is claimed to boost production by 30% and eliminate foaming, are (l. to r.) Irving Zick, Samuel Poles, and Edward Poles, all of the Rochelle Club Beverage Corp., Mt. Vernon, N. Y. and John E. Kostura, president of Kol-Flo.



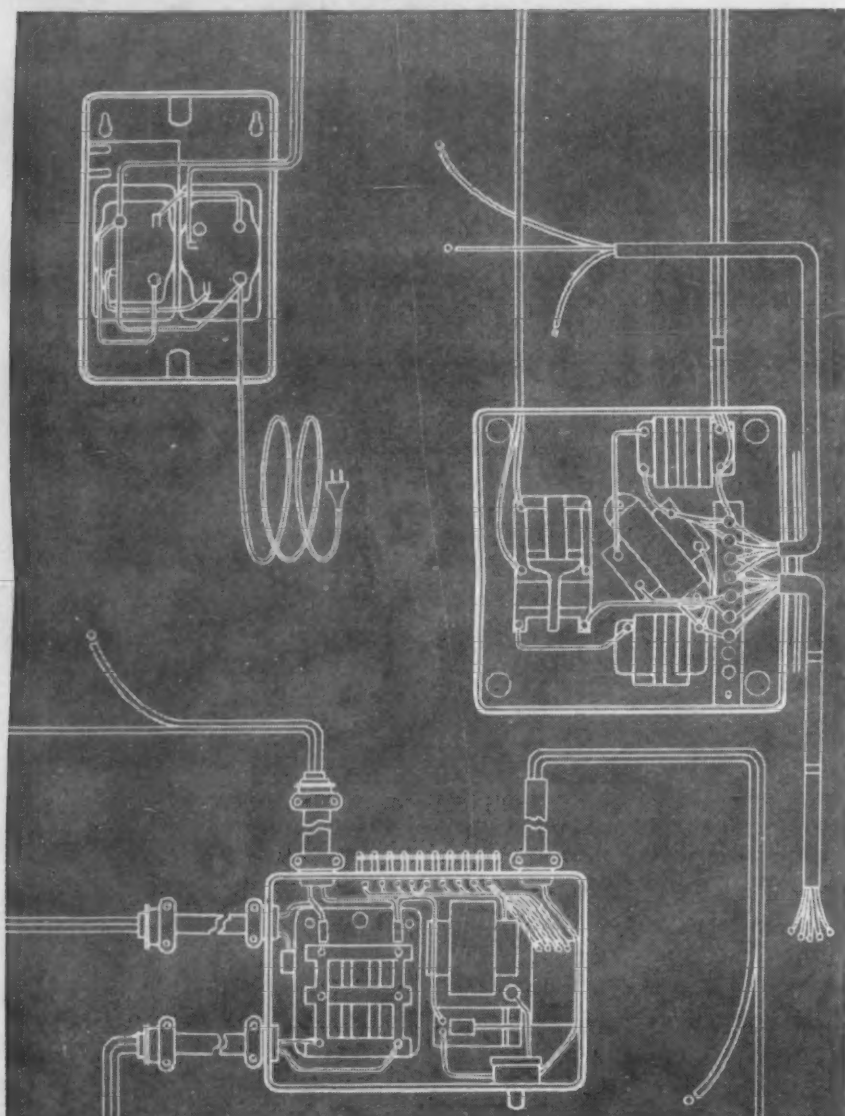
A PACKAGED REFRIGERATION system for high temperature service load applications that does not need to be removed from the vendor for cleaning condenser coils was also exhibited at the bottler's convention by Ideal Dispenser Co.



DEMONSTRATING the pushbutton selector on the "Delft" three-flavor upright vendor by Atlas Tool & Mfg. Co., St. Louis, are Vaman Haroian, (l.) engineer and Frank Parker, field service representative.



ALBERT FOGEL, president of Howard Refrigerator Co., makes a selection from Howard's new model 198-H upright bottle vendor that will vend from one to 11 flavors and hold 198 bottles. John Cheek (center), Atlanta sales manager, and Luther Wiesner, New York City sales manager for Howard, look on.



completely assembled
R-B-M CONTROL PANELS
for air conditioning

R-B-M Motor Control Panels for heating, cooling and air conditioning equipment are engineered and built as complete packages. All components, from contactors and relays through wiring harnesses and cord sets, are pre-assembled and the panel is ready for you to hook-up. As part of the Essex Wire Corporation, R-B-M joins hands with the other divisions to utilize their specialized skills and produce a completely integrated unit—custom-built to your needs. R-B-M engineers are experienced in Underwriters' requirements and available for consultation at any time. Call your nearest R-B-M Sales Engineer or write for information.

R-B-M DIVISION
ESSEX WIRE CORPORATION
Logansport, Indiana

Controls for Electronic,
Refrigeration, Industrial, Appliance,
Communication and Automotive Industries



SHOWING IDEAL DISPENSER CO.'S new model 400-B three-flavor selective vendor to F. H. Roberts of 7-Up Iowa Co., Des Moines (r.), John Van Pelt, Ideal sales representative explains that the refrigeration system on the uprights is interchangeable with the company's chest type coolers and the upright has the same basic trap mechanism as the chests.

Trane Names Mullins

LA CROSSE, Wis. — The Trane Co. has announced the appointment of William L. Mullins to its Oklahoma City sales office. Mullins has previously been associated with the Trane office at Memphis.



LARKIN
means
quality
•
LARKIN
WALL
HUMI-TEMP

Quality speaks a language everybody understands. Wholesalers, dealers, and users alike know that Larkin means quality—of workmanship, materials and performance.

Manufacturers of the original Cross-Fin Coil
• Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils
• Direct Expansion Water Coolers • Heat Exchangers • Disseminator Pans.

WATCHDOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS

519 MEMORIAL DR., S.E. • ATLANTA, GA.





NEW FLAT TOP BEVERAGE COOLER of 12-case capacity is shown by Russ Odor, sales manager for True Mfg. Co., to Gayle Sawicki of the 7-Up Bottling Co. in Omaha, Neb. Bob Trulaske (r.), general manager for True, looks on.

LOADING THE "ATLAS-SLOYER" coin vendor that will vend eight flavors and hold more than nine cases of bottles is Boudie Storey, Jr., executive vice president of Atlas Metal Works, Dallas, Texas.



EVERYTHING IS ACCESSIBLE from the front in Champion Vendor Co.'s new front-loading "Selector" model 220. Surrounding the unit are (l. to r.) Ari Perez, chief administrative engineer for Tyler Refrigeration Corp. (which makes the Champion unit); Bob Tyler, Jr., assistant to the president; Jerry Wohlford of 7-Up Bottling Co. in Mankato, Minn.; Howard Tebay, Champion sales representative; and Leon Hadapp of 7-Up in Mankato.



CANNED BEVERAGE VENDING machine that is all manually operated is demonstrated at the bottler's convention in Miami by A. J. Carithers (l.) of the advertising and sales promotion department of Kelvinator Div., American Motors Corp., and A. J. Dombles, Kelvinator commercial sales manager in the New York zone.

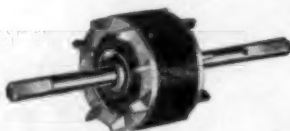
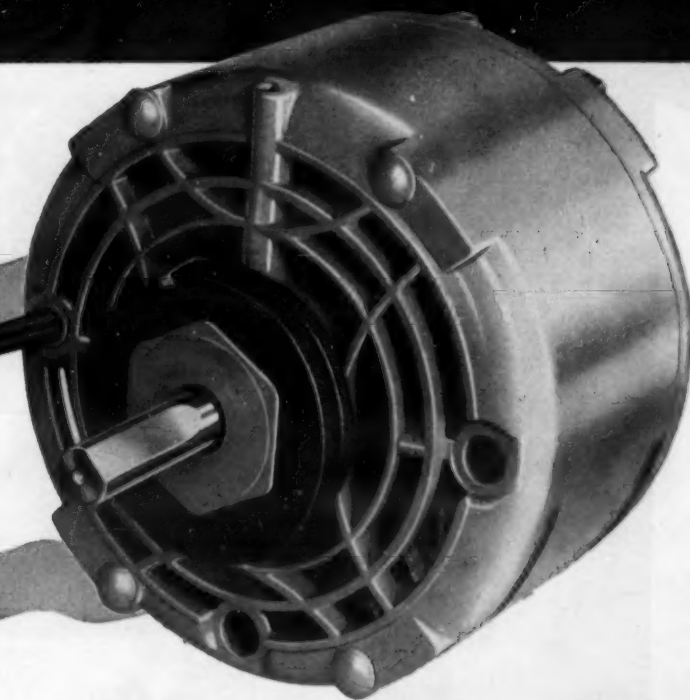


DEMONSTRATING the attractive display superstructure on a 7-Up dispensing unit made by S & S Products, Inc. of Lima, Ohio is Mrs. Marie Schilling, secretary and treasurer of that company. The transparent covers on the unit are a new feature.

Super SHADED POLE MOTOR with *All* THE GOOD FEATURES

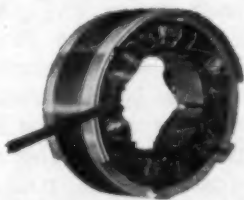
for air conditioning and

air moving applications



"AL-SPUN" ALUMINUM ROTOR CAGE

Heat-treated for lowest rotor losses. Integral cooling fan and vented core. Dynamically balanced.



"UNI-SPUN" STATOR FRAME

Anchored laminations, ample back iron, strong pole tips mean core rigidity, better heat dissipation, quiet operation.

You will boost sales by teaming your product with Lamb Electric Super Shaded Pole Motors. They will give your product the motor advantages of long life, quiet operation, high operating efficiency, and lasting good appearance.

Behind Lamb Electric Super Shaded Pole Motors is our 40 years' experience working with manufacturers of household appliances, such as food mixers, sewing machines, floor polishers and vacuum cleaners . . . experience that has resulted in these 10 features:

- "UNI-SPUN" STATOR FRAME for maximum rigidity
- FORMVAR INSULATED WIRE WINDINGS for high strength and insulation resistance
- "AL-SPUN" ALUMINUM ROTOR CAGE for maximum conductivity
- DIE-CAST END FRAMES . . . sturdy, lightweight, corrosion-resistant
- BEARINGS widely spaced, amply dimensioned
- AMPLE OIL RESERVOIR . . . positive oil circulation
- SHAFT precision ground to controlled surface finish
- MOUNTING absorbs vibration
- ADVANCED DESIGN, quality materials, and up-to-date manufacturing methods
- FINISH . . . moisture and abrasion-resistant

THE LAMB ELECTRIC COMPANY • KENT, OHIO

In Canada: Lamb Electric — Division of Sangamo Company Ltd. — Leaside, Ontario

Lamb Electric
SPECIAL APPLICATION FRACTIONAL HORSEPOWER MOTORS

BETZ

Model **C** for Reach-Ins



EXCLUSIVE BETZ DESIGN

- Installed above first shelf with the refrigerated air exhausted against back wall.
- Uniform temperature throughout cabinet without door sweating or refrigeration losses.
- All aluminum construction with life lubricated motor plus thermal protection.
- Made in five sizes, from 100 to 300 BTU per 1° T.D.
- Extremely compact—Betz ratings you can trust.

QUALITY at LOW COST

BETZ CORPORATION HAMMOND INDIANA

Refrigeration Problems And Their Solution

By Paul Reed
For Service and Installation Engineers



Manometers (1)

Manometers are pressure gauges. In one form, they are called barometers to measure atmospheric pressure. In another form, they are called draft gauges, used to measure very small differences in air pressures. In another form, they are used on refrigerating systems as suction pressure gauges. In laboratories, manometers are made in numerous forms for a variety of purposes.

MANOMETER PRESSURE GAUGE

Like the ordinary dial type

compound and high pressure gauges used in refrigeration service, manometers actually read pressure differences. In the dial type gauge, a diaphragm, bellows, or bourdon tube, separates the two different pressures. Inside these is the pressure to be measured; on the outside, atmospheric pressure, usually assumed to be at sea level. If the gauge is disconnected and not in use, there is atmospheric pressure both inside and outside and the hand shows zero, that is no difference in pressure; so zero gauge is atmospheric pressure.

In its simplest form, a ma-

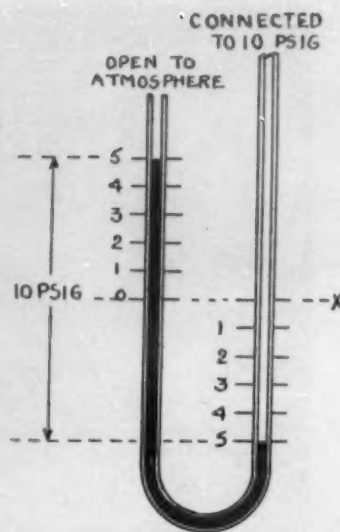


FIG. 1: Simple U tube mercury manometer connected to an evaporator at 10 p.s.i.g. pressure.

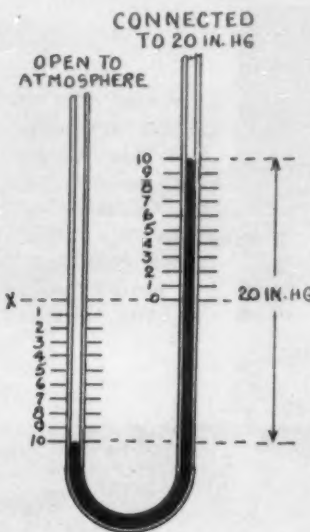


FIG. 2: Simple U tube mercury manometer connected to an evaporator at 20 in. hg. pressure.

nometer is merely a U-shaped glass tube as shown in Fig. 1. For purposes of explanation, let us suppose that each of the two legs or columns of this tube are perfectly parallel, and are about 2 ft. long; and the bore, or inside diameter, of the glass tube is 1.128 in. throughout the entire length of the tube. Therefore, the inside cross sectional area of the tube is 1 sq. in.

We now pour mercury into one end of the tube until it comes up about 10 in. above the curved part of the tube. For accuracy, we hang a plumb line on the side of one tube and see that the tubes are plumb.

The top of the mercury in each column has atmospheric pressure on it, so the mercury will stand at the same height in each column. If we draw a line from the top of the mercury in one tube to the top of the mercury in the other tube, this line will be level. We will mark this line X as the original level indicating atmospheric pressure on both sides of the manometer.

$$1 \text{ IN. HG.} = .491 \text{ P.S.I.}$$

Mercury is very heavy—about 13½ times as heavy as water—so a cu. ft. of mercury weighs 848 lbs. There are 1,728 cu. in. in a cu. ft. Therefore, 1 cu. in. of mercury weighs .491 lbs., or roughly ½ lb.

Now we attach the low pressure side of a refrigerating unit, to the open end of the right hand tube marked A. If the pressure in the low side of the unit is zero gauge, nothing happens to the level of the mercury in the U-tube, for zero gauge is the same as the atmospheric pressure on the mercury in the other tube, marked B.

If the pressure in the low side of the unit is ½ pound per square inch gauge (½ p.s.i.g.), the mercury in tube A drops about ½ in., and the mercury in tube B rises ½ in. This makes the mercury level in tube B 1 in. higher than that in tube A.

Therefore, the ½ p.s.i.g. refrigerant pressure is supporting 1 cu. in. of mercury (1 in. high,

and with an area of 1 sq. in.). Since one cu. in. of mercury weighs about ½ lb. (.491 to be exact) 1 in. difference in levels of the mercury indicates a difference of pressure of ½ p.s.i.

If the low-side pressure is raised ½ p.s.i. to 1 p.s.i.g., the mercury level in tube A goes down another ½ in. to a level of 1 in. below X and up in tube B another ½ in. to a level of 1 in. above X, making a difference in mercury level of 2 in. Thus, the 1 p.s.i.g. is supporting 2 cu. in.

of mercury, or a weight of 1 lb. $2 \times .491 = 982 \text{ lb.}$

$$1 \text{ P.S.I.} = 2,036 \text{ IN. HG.}$$

For each pound per sq. in. gauge low-side pressure, there will be a difference in mercury levels of 2 in. If we draw lines slightly more than 2 in. apart (2.036 in. to be exact), marking how much higher the mercury is in tube B than in tube A, these lines will represent p.s.i.g., that is, p.s.i. above atmospheric pressure.

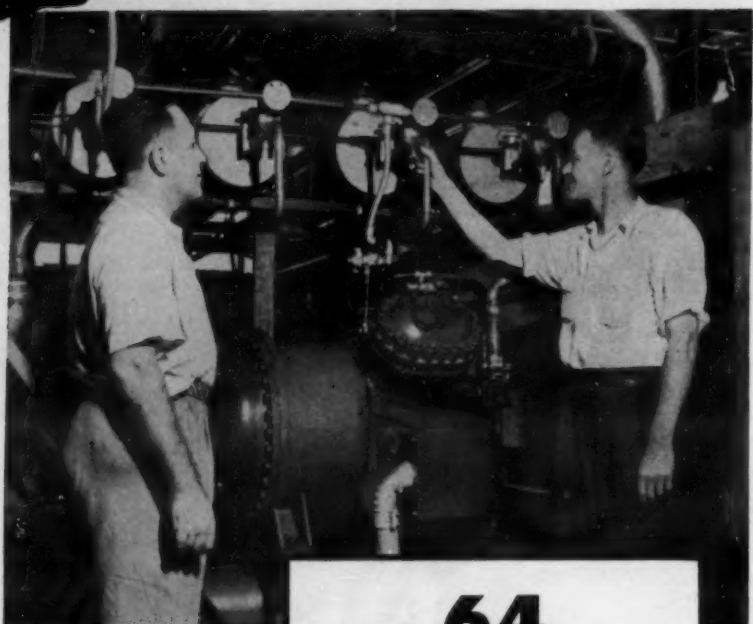
If the height of the mercury in tube B is higher than that in tube A, it means that the pressure on the mercury in tube A is greater than atmospheric pressure. If, on the other hand, as in Fig. 2, the pressure in the suction side of the system goes below atmospheric pressure (into a vacuum) the level of the mercury in tube A rises above that in tube B, and the difference in levels is the measure of how much lower the pressure in the system is than atmospheric pressure, that is, how much of a vacuum there is in the system.

If we draw lines 1 in. apart, marking how much higher the mercury is in tube A than it is in tube B, these lines indicate

(Continued on next page)

Most Compact of ALL CHILLERS

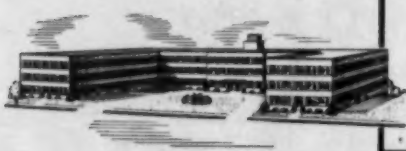
HEAT-X 'CH' UNITS



**64
SQUARE FEET
for
120 Tons
of COOLING**

Architect
Louis C. Hinckley
General Contractor
E. J. Pinney Co.

Air Conditioning Contractor
Simons Burner & Petroleum Co.



ENTIRE chilling plant for the 120 Ton air conditioning system at the new Medical Center, Springfield, Mass. occupies only 8' x 8' of floor space. In that area are 4 thirty ton Heat-X Inner-Fin Chillers, 4 thirty ton Heat-X Inner-Fin heat interchangers and 2 sixty ton compressors.

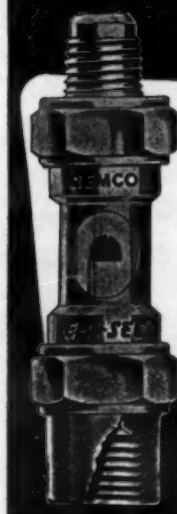
Such spectacular savings in valuable space are possible only with HEAT-X Chillers. Inner-Fin, patented Heat-X design feature, makes these units the most compact shell and tube chillers on the market.

Water passages of Heat-X Chillers are of non-ferrous construction throughout, eliminating any corrosion problems. Since they are single pass, there is no oil trapping problem.

Request Bulletin #1037 for complete information on 'CH' Chillers, available in capacities from 2 to 90 tons.

HEAT-X, Inc.
BREWSTER • NEW YORK

E-Z-SEE LIQUID INDICATOR



NEW FLO INDICATOR FLAP
SHOWS ALL FLOW CHANGES

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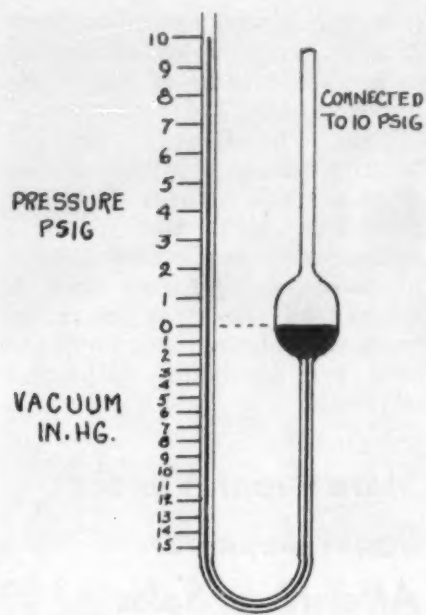


FIG. 3: U tube mercury manometer used instead of compound gauge. Zero point does not have to be moved as in Figs. 1 and 2.

Manometers --

(Continued from preceding page) inches of mercury (abbreviated In. Hg.) vacuum, that is, inches of mercury below atmospheric pressure.

TUBE MAY BE SMALL BORE

In this mercury U-tube we have used a glass tube with an inside bore of 1.128 in. and an internal cross sectional area of the mercury column of 1 sq. in. Actually, this is not necessary; the reading will be the same, regardless of the size of the tube, provided that the area of the top of the mercury column exposed to the low-side pressure is the same as that open to the atmosphere, so in practice, the bore of the tube is only large enough that the mercury column is easily seen.

In the above type of mercury manometer we would have to be shifting the scale up and down as the suction pressure changes, so that the zero mark would follow the top of the mercury in tube A.

This is somewhat of a nuisance, so instead of the area of the tops of the mercury being the same in both tubes, we can enlarge tube A to a reservoir

with an area many times the cross section inside area of tube B. If the diameter of the mercury in tube A is one in., and in tube B .010 in. (100 to 1), the area of the mercury in tube A is 10,000 times the area of the mercury in tube B. Then the rise in tube B would be 10,000 times the fall in tube A, and the zero mark, indicating the level in tube A need not be moved. See Fig. 3.

(To Be Continued)

Welbilt's Sales Hit \$6,359,367 for Quarter

DETROIT—Welbilt Corp. has reported net sales of \$6,349,367 and net profit of \$972,616 for the quarter ended Sept. 30.

Net profit included non-recurring profit of \$557,255 from the sale of the Metal Fabricating Div. Net is equal, after preferred dividend requirements, to 22 cents a share on 4,198,007

shares of common stock presently outstanding.

The company was known as Detroit-Michigan Stove Co. prior to May 17, 1955, on which date Welbilt Stove Co., Inc. was merged into Detroit-Michigan and the present name adopted.

S. Walker Appointed By General Controls

GLENDAL, Calif.—General Controls Co., maker of automatic controls, recently announced appointment of S. Alfred Walker as public relations representative at its offices here.

Walker's duties will be coordinated with advertising and sales promotion and with the public relations counsellors for the firm, the announcement said.

A graduate of Fordham university, Walker formerly was associated with General Electric Corp., and Young & Rubicam advertising agency.

Borg-Warner Elects McLary Vice President

CHICAGO—Election of M. R. McLary as vice president of Ingersoll Products Div. of Borg-Warner Corp. was announced recently by J. H. Ingersoll, divisional president.

Since December, 1954, McLary has been works manager of the Airtemp Div. prior to of Ingersoll Products, a title

which he continues to retain.

McLary joined Ingersoll Products Div. as chief engineer in 1952, and subsequently became director of engineering and research, and then factory manager. He was master mechanic of the Airtemp Div. prior to joining Borg-Warner.

'Foamglas' Production To Expand

PITTSBURGH—J. P. Staples, executive vice president of the Pittsburgh Corning Corp., has announced that the company will expand production of "Foamglas" cellular glass insulation at its Port Allegany, Pa. plant by 50%.

Additional melting and processing equipment, at an estimated cost of \$1,250,000, will be installed in existing buildings.

This expansion is in addition to a similar 50% increase in

production at the company's Sedalia, Mo. plant announced earlier this year. This program, costing \$1,500,000, is now nearing completion.

Builds New Building

LITTLE ROCK, Ark.—Refrigeration & Electric Supply Co., is building a new building, part one-story and two-story for its wholesale warehouse and offices, containing about 25,000 sq. ft.



Bends as easy as
PIE*



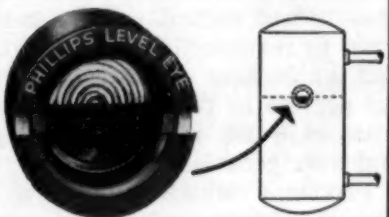
* **REVERE**
DRYSEAL
COPPER
REFRIGERATION
TUBE

You need no tools when you bend dead-soft DRYSEAL . . . just hands . . . while the special temper and ductility of DRYSEAL make it easy to flare for compression fittings without danger of splitting. Another thing you'll like about DRYSEAL is the double-crimp seal at each end of the tube. This is the final step in manufacturing, immediately following a special cleaning and dehydrating operation. This keeps dirt and moisture from entering the tube. The seal is made in such a way as not to change the diameter of the tube so that it can pass through any opening large enough for the tube itself. Tube sizes— $\frac{1}{8}$ " to $\frac{3}{4}$ " O.D. The DRYSEAL carton, attractively designed for easy identification, contains one 50-foot coil . . . is easier to handle, light weight, economical and sturdily made to assure protection of the tube in stock and in transit.

REVERE
COPPER AND BRASS INCORPORATED
Founded by Paul Revere in 1801
230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Brooklyn, N. Y.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N. Y.
Sales Offices in Principal Cities, Distributors Everywhere.

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New Method Defrosts Coils from Inside Out

'Heat-Cel' Heated Solution Passes Heat To Refrigerant During Defrost Cycle

By A. P. Boehmer, Dole Refrigerating Co.

One way to defrost refrigerating coils quickly is to heat the refrigerant thus melting the ice off the coils from the "inside out." A successful method of doing this is now available in a new product called a "Heat-Cel."

The Heat-Cel contains a heated solution which passes this heat to the refrigerant during the defrost cycle. The heat in the Heat-Cel is maintained at a constant condition by an electrical element.

Additional Parts Complete System

Completing the defrosting system are several additional parts. A solenoid valve serves to separate the hot gas from the coil and condenser. This solenoid valve remains closed during the normal cycle but on the defrost cycle a time clock shuts off the fan to the cooling unit and opens the solenoid valve.

The hot gas from the compressor discharge passes through a line which is soldered to the drain line then passes into the coil where the heat is finally given up to melt the accumulated frost formation. The drain line is heated so that the water

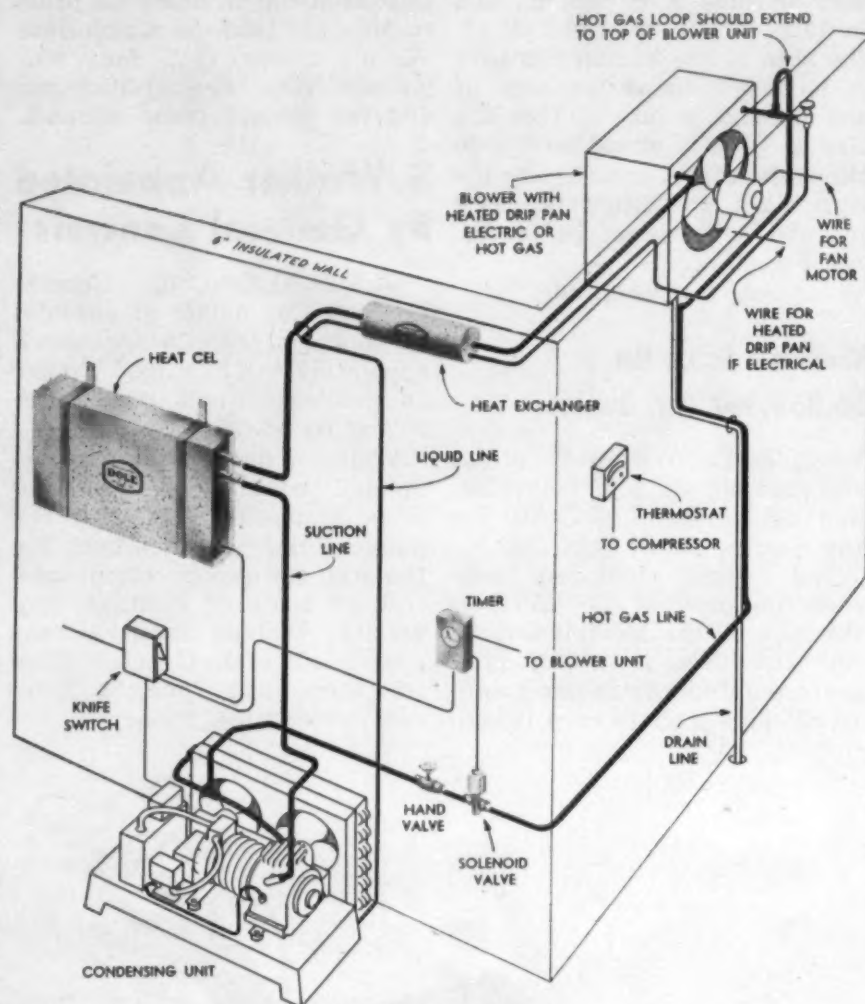
which collects from the melted ice will pass out of the refrigerated space.

After the refrigerant has given up its heat in the cooling coil it condenses into a liquid refrigerant and then enters the suction line which returns it to the compressor. If this liquid refrigerant reached the compressor it would cause damage. Instead of going directly to the compressor, therefore, the liquid is directed to the Heat-Cel where the liquid is re-evaporated; that is turned back into a vapor.

By-Pass In Normal Cycle Keeps Vapor from Heat

Because of a built-in by-pass arrangement the refrigerant vapor during the normal cycle is not directly exposed to the heated solution; however, the liquid refrigerant remains in the Cel until it has been re-evaporated. In the vapor form it returns to the compressor.

The heat exchanger shown in the accompanying drawing functions only during normal operation. It cools the liquid refrigerant going through the expansion valve and warms the suction vapor coming back to the compressor to insure a dry



DRAWING shows "Heat-Cel" method of defrosting refrigerating coils quickly by heating the refrigerant, thus melting ice off the coils. Heat-Cel is made by Dole Refrigerating Co., Chicago.

vapor coming back to the compressor. It serves to increase the efficiency of the refrigeration system.

The time for defrosting varies

with the installation. Defrost times of as short as five minutes have been recorded. However, defrost time usually runs in the neighborhood of 15 minutes. De-

frost cycles vary anywhere from 2 to 4 cycles a day depending upon the severity of the frosting condition.

Using the Heat-Cel for defrosting makes available a constant amount of heat. It is not dependent upon ambient temperatures, compressor head pressures, or operating time. A control on the Heat-Cel maintains the solution at a temperature for maximum defrosting efficiency.

Store Front Vendor Banks Seen for After-Hour Sales

CHICAGO—A prediction that supermarkets will use vending machines to merchandise foods when the stores are closed was voiced at the annual convention of the National Automatic Merchandising Association by Robert Z. Greene of Rowe Mfg. Co., vending machine maker.

Pointing out that most supermarkets are open 54 hours out of the 168 in a week, Greene said vending machines can produce revenue during the 114 hours stores are closed.

He predicted that supermarkets and shopping centers would put banks of packaged food vendors in store fronts for after-hour or drive-in sales. He said also it was possible that prepared foods for home consumption would be vended from automatic shops in or near large factories in suburban or rural areas.

NAMA President I. H. Houston of Rowe Spacarb, Inc., Stamford, Conn., said the three food items apt to have the widest distribution in the immediate future are milk, bread, and eggs. However, he added, vending machine manufacturers aren't sure how to handle whole fresh eggs.

Houston said 1955 sales via vending machines are expected to rise to \$1.75 billion from \$1.5 billion last year.

Trane To Supply Belgian Railroad Cars with Air Cooling, Refrigeration

LA CROSSE, Wis. — The Trane Co. disclosed recently that it had signed a sales contract to furnish Gregg Co., Ltd., Belgian builder of railroad cars for service in foreign countries, with railroad air conditioning and refrigeration equipment.

Products which Trane will furnish Gregg under this new agreement include compressors, condenser and evaporator coils, and condenser and evaporator fans.

Gregg has been building railroad cars of all types for more than 50 years and is said to have one of the largest and most modern plants in the world devoted exclusively to the manufacture of railroad cars for foreign consumption.

Buffalo Firm Files Name

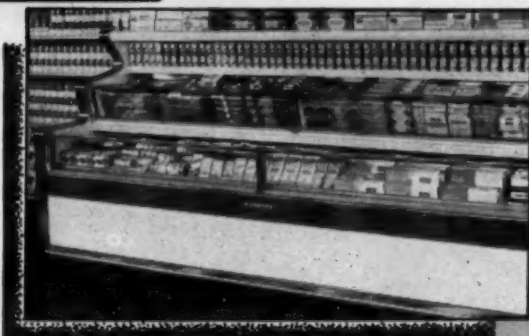
BUFFALO—A business name has been filed in the Erie County clerk's office for A&T Refrigeration & Appliance Service, 236 Massachusetts Ave., Buffalo, by Albert E. Mangus and Thomas A. George.

More Profits with Warren SUPER MERCHANDISERS... all one height for every department!



Holds 72 qts. milk or 49 doz. eggs per lineal ft. of bottom deck. Gives a 20% refrigerated cube advantage. Two refrigerated decks adjustable for heavy or light loads, plus nonrefrigerated deck. 8 or 11 ft. long.

39 1/4" shopping rail for maximum cube and full-width reach. Low 41" rear height... rear rail 5" wide to serve as platter rest. With or without numerous canopy styles.



island merchandiser

On wheels for top mobility... just plug in for quick changes and quick sales. THERMOPANE display guards, stainless trim, 1/2 HP unit. 32" with no strain... a top performer... a top profit maker always.

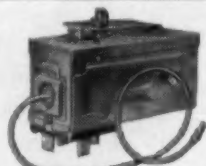
Warren Refrigerators

P.O. BOX 1436, ATLANTA 1, GA.

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WORLD'S LARGEST MANUFACTURER OF REFRIGERATION CONTROLS



E11-1628 Control

Handy Replacement Reference

No. 1544 shows you the right replacement control for the job. Over 5,000 controls listed... largest line in the industry. This manual not available from the factory. Buy your copy today from your Ranco wholesaler.

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See your Ranco wholesaler for the right control. Install Ranco... to be sure.



Ranco Inc.

COLUMBUS 1, OHIO



NEW NORGE 'Tri-Level' refrigerator shown at left is one of nine new refrigerators introduced to distributors in Chicago recently.

1956 Norge Refrigerators--

(Concluded from Page 1, Col. 3)

Functionally, the Tri-Level provides a middle compartment for ice cubes, ice cream, and frozen juice concentrates, a locker at the bottom for 105 lbs. of frozen food, and 10 cu. ft. of regular storage space in the upper half of the appliance.

The arrangement will enable the homemaker to remove frequently-used ice cubes or frozen juices without disturbing the temperature of the frozen food locker, it was pointed out.

The model is one of nine refrigerators shown to distributors meeting at the Palmer House, Chicago.

The line includes a refrigerator with 11.5 cu. ft. of general food storage space, a two-door model with provision for 124 lbs. of frozen food, and a "budget-priced 8.5-cu. ft. model with a 46-lb. frozen food capacity.

"The Tri-Level affords the convenience of all storage area behind one door," Connell said. "The two-door is for the family that wants king-size freezer area plus a full-size refrigerator."

An all new Norge "In-A-Dor" crisper is located at convenient eye level in the door. This crisper can be lifted out and carried to a work center for preparation of salads and other foods or cleaning.

The frozen food locker chest is situated on the bottom of the Tri-Level. It rolls out to the housewife's hand on nylon rollers. A free-floating, self-sealing

door pulls the chest closed to assure constant zero-cold temperature, Norge said.

The 13-cu. ft. Tri-Level refrigerator-freezer comes in a choice of white or soft pastel shades of green, pink, and yellow. The "custom cap" feature is designed "to bring even more custom color and beauty to the kitchen."

"These custom caps can be installed easily in a few moments," it was stated. "These caps can be used with white units as well as the pastel shades.

"The free-floating, self-locking design has been applied to all door latches. Exterior doors open under slight elbow pressure. Freezer chest doors have stainless steel catches to close the door if left slightly ajar by the housewife."

Six models feature the Norge Customatic refrigeration system, which controls humidity and temperature in the general food storage compartment. Defrosting is completely automatic.

Tilt-down shelf guards are provided across the entire width of the double-deep "Handidor." They eliminate up and over lifting and prevent upsets.

The new line includes fold-back, removable, and adjustable shelves that provide space for bulk storage in the refrigerator compartment. Other features include roll-out shelves, a wide and deep meat saver, removable egg nest, and butter and cheese banks.

Model No.	Capacity (Cu. Ft.)	Type	Freezer Capacity (Lbs.)	Suggested List Price
TC6-13	12.97	Tri-Level Customatic	105	\$549.95
TC6-11	10.96	Tri-Level Customatic	84	469.95
C6-135	13.00	Double-Decker Customatic	124	549.95
C6-14	13.61	Customatic	80	449.95
C6-116	11.17	Customatic	60	399.95
C6-12	11.63	Food Stor-Customatic	*	369.95
A6-115	10.98	Deluxe	55	299.95
A6-86	8.52	Deluxe	56	199.95
A6-85	8.52	Deluxe	46	Open List

*Ice Cube Locker only.

9th ARI Exposition Attendance--

(Concluded from Page 1, Col. 5)

ported F. G. Coggin, who is chairman of the Exposition committee.

Veteran observers all agreed that the 9th Exposition was much "dressier" than any previous event, it being evident that most exhibitors had taken special measures this year to offer new and improved products in the most desirable settings.

While manufacturers of unitary air conditioners for both commercial and residential applications were more prominent in this Exposition than at any in the past, there was no diminish-

ing of the number of quality in exhibits of manufacturers of component parts and commercial refrigerator equipment. In fact, many exhibitors of such lines were showing much broadened lines of products, necessitated by the continuing growth of the industry.

Many exhibitors reported that interest in the products exhibited was at the highest level in years, and some were even expressing mild concern that the buying interest generated by the Show would tax production schedules which are already somewhat overloaded.

UsAirco Buys Floral City Heater To Enter Warm Air Heating Field

MINNEAPOLIS — United States Air Conditioning Corp. has purchased the 72-year-old Floral City Heater Co. of Monroe, Mich., it was reported in a joint announcement by David E. Feinberg, president of UsAirco, and Meyer Rosen, Floral City president.

The move marks the entry of UsAirco into the warm air heating field and heralds an increased sales effort by the company in all phases of the residential air conditioning market, according to Feinberg.

It also marks the latest step in a long-range program of expansion and diversification of the company's manufacturing and marketing operations, the president said.

The Floral City firm was established in 1883 and occupies a modern 80,000-sq. ft. plant in Monroe. It manufactures a complete line of gas and oil-fired residential warm air furnaces, as well as combination home heating and cooling units, all under the trade name "Flo-Co."

Floral City Heater will be operated as a division of UsAirco and will retail all of its personnel. Rosen will continue to direct its activities as general manager of the new division and will be named a vice president of UsAirco. L. J. Bauer, as assistant general manager, will continue in charge of all manufacturing operations.

Plans are for both firms to continue to promote and sell their separate product lines with their existing sales organizations.

The announcement also stated that Floral City distributorships will not be affected by the company's new affiliation and that Rosen will continue his personal direction of Floral City sales.

"The acquisition of manufacturing facilities for warm air furnaces by UsAirco has been dictated by the rapid expansion of the year-round residential air conditioning field," Feinberg declared.

Feinberg pointed out that the purchase is the second major move this year in UsAirco's long-range program. In May, with Sterling Heat Specialties Div. of Sterling Radiator Co., UsAirco established a jointly-owned subsidiary, Sterlaireco, Inc., in Westfield, Mass., for the manufacture of UsAirco gas-fired unit heaters.

United States Air Conditioning, founded in 1942, manufactures a complete line of residential cooling equipment, packaged air conditioners for commercial use, and factory-assembled self-contained central air conditioning plants, designated RK, for larger applications. It also produces blowers, fans, and "Modulaire" remote room unit air conditioners.

Atomic Exposition and Congress To Discuss Refrigeration, Dec. 10-16

CLEVELAND — The role of air conditioning and refrigeration plays in the atomic age will be among the subjects discussed at the Nuclear Engineering and Science Congress to be held in Cleveland's Public Auditorium, Dec. 12-16.

In conjunction with this Congress, the first International Atomic Exposition will be held in the same building Dec. 10-16, it was announced. Over 160 exhibitors are listed for this event.

Twenty-six engineering and scientific groups, including the American Society of Refrigerating Engineers, are combining with leading universities, the United Nations, and such government agencies at the Atomic Energy Commission, Department of Commerce, Bureau of Standards, and Quartermaster Corps Food & Container Institute in presenting technical data at the Congress. These various groups are coordinated by the Engineers Joint Council, the announcement said.

While technical sessions are under way, U. S. and foreign firms who are harnessing the atom for industry, medicine, science, and agriculture will be displaying their equipment in the Public Auditorium's five exhibit halls, Exposition officials reported.

The International Atomic Exposition will open at 2 the afternoon of Dec. 10. It will be open to the public from 2 to 10 p.m. Saturday and Sunday, Dec. 10-11. During the remainder of the show, the general public will be admitted only during the hours

from 6 to 10 p.m. daily, it was revealed.

Reactor models of latest design will be shown at the Exposition. Remote mechanical hands have been developed to handle "hot" materials encountered in atomic installation, according to officials. These and their accompanying controls will be in operation at the show. Closed circuit television for watching the reactors work will be another feature.

A group of non-technical exhibits developed at the AEC's laboratory at Oak Ridge, Tenn., will be one of the Exposition's main events, it was pointed out. Entitled "The Atom and You," the 20-part exhibit tells the story of the atom and its peacetime uses in a way easily understood by laymen, the report continued.

Using photographs, demonstrations, and working models, the exhibit gives basic facts about atoms and isotopes and their uses in modern life. Visitors may personally participate, officials said.

More than 300 technical papers will be read in the 50 technical sessions of the Nuclear Congress. As many as five separate meetings will be held simultaneously under the auspices of the 24 participating societies, it was announced. Preliminary plans for the program include topics covering Canadian, English, Australian, and South African, as well as American, nuclear developments, Congress officials declared.

Copies of the final program

Borg-Warner Corp. Acquires Primor

CHICAGO — Continuing a policy of going into new and diversified fields of manufacturing, Borg-Warner Corp. announced it has entered into an agreement for the acquisition of Primor Products, Inc., at Adrian, Mich.

Primor Products, which is primarily a contract manufacturer of refrigeration units for central air conditioning systems, is to be operated as a Borg-Warner division.

Borg-Warner's first action after the consummation of the transaction will be to expand the manufacturing space of the plant, which is of block and steel construction and was built in 1953 on five acres of land at 2011 W. Beecher Rd., Adrian.

"Several details regarding the acquisition remain to be settled but it is fully expected that these details will be settled in the near future," said J. H. Ingersoll, a Borg-Warner divisional president.

"Primor Products, backed by Borg-Warner's financial strength and research and engineering facilities, will be assured of continued growth in the rapidly expanding air conditioning industry. We will continue the operation in much the same manner, offering the same air conditioning products and engineering services to Primor Products' customers.

Gorton F. Price, president, will remain with the company in a consulting capacity.

Gorton Price announced the formation of Primore Sales Inc. for the purpose of designing, developing, and marketing refrigeration products.

Stanley H. Morse, Robert E. Price, John H. Parsons, and Robert L. Morse will be associated with Price and will continue the designing and selling of valves to the refrigeration industry which they have done since 1946.

for the Congress and Exposition will be issued in the registration foyer of Public Auditorium. A number of functions, including inspection trips in the area, will be sponsored by various societies throughout the week, it was reported.

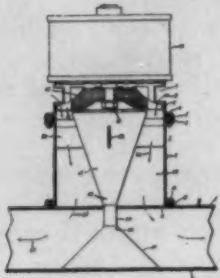
Several groups will give luncheons throughout the week of the sessions and an All-Congress Banquet will be held Wednesday, Dec. 14. Foreign registrants will be luncheon guests of the Fund for Peaceful Atomic Development, Inc. The Nuclear Engineering Div., American Institute of Chemical Engineers, chief sponsors of the Congress, will have a dinner Tuesday, Dec. 13 in the Hotel Statler, it was further announced.

Among exposition exhibitors will be Allis-Chalmers Mfg. Co.; Avco Mfg. Corp.; Babcock & Wilcox Co.; Bailey Meter Co.; Borg-Warner Corp.; Byron Jackson Div.; Combustion Engineering; Crane Co.; General Chemical Div.; Allied Chemical & Dye Corp.; General Electric Co.; General Motors Corp.; Leeds & Northrup Co.; Titeflex, Inc.; Trent Tube Co.; Wagner Electric Corp.; Westinghouse Electric Corp.; Weston Electrical Instrument Corp.; and Worthington Corp.

PATENTS

Week of July 26
(Continued)

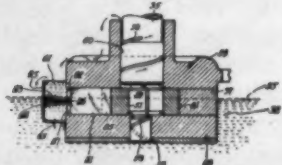
2,713,967. VENTILATING DEVICE. Fred B. Schneider and Anthony C. Siciliano, Wesleyville, Pa., assignors to General Electric Co., a corporation of New York. Application June 11, 1952. Serial No. 292,904. 3 Claims. (Cl. 230-47.)



1. A ventilating system comprising a first duct, a driving means mounted on one end of said first duct and closing said one end, an axial flow blower operably connected to said means and mounted in said first duct to force said air into and axially through said first

duct, a plurality of openings formed in the circumferential surface of said first duct between said means and said blower for admitting air into the interior of said duct, a second duct arranged substantially at right angles to said first duct and communicating with the other end thereof to receive air therefrom, axially extending vanes mounted transversely in said first duct to reduce swirling motion of the air initiated by said blower, a first conical member positioned axially within said first duct secured to said vanes and having its base adjacent to said blower on the side remote from said openings with its apex end adjacent said other end, said base having a cross-sectional area approximately half that of said first duct and said apex end having a cross-sectional area less than a tenth of the cross-sectional area of said first duct thereby defining a diverging annular passage with the interior wall of said first duct whereby said air is substantially decelerated in said first duct to provide an increase in static pressure, and a second conical member in said second duct having its base resting on an interior wall of said second duct remote from said cylindrical duct, its apex end within said second duct and being coaxial with said first conical member thereby to reduce the kinetic energy loss during the deflection of the decelerated air, said second conical member having an outer surface that is at an angle of substantially 45 degrees with respect to its axis, said surface defining with the lower edge of said first duct a continuously expanding duct in the region of the deflection of said air.

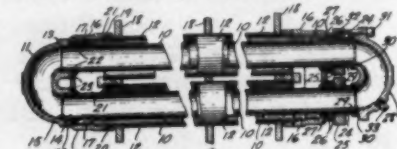
2,713,969. COMPRESSOR UNLOAD-ER. Frank E. La Flame, Twin Lakes, and Earl F. Hubacker, Muskegon, Mich., assignors to Borg-Warner Corp., Chicago, Ill., a corporation of Illinois. Application June 8, 1951. Serial No. 230,506. 5 Claims. (Cl. 230-138.)



1. A sealed unit containing a fluid compressor and a motor for operating said compressor, said compressor including a stationary member having a compression chamber therein and inlet and outlet ports communicating with said chamber, a cylindrical member arranged within said compression chamber and rotatable therein by said motor, means adapted to cause fluid to be compressed between said members including a blade slidably mounted in a

slot formed in said stationary member and cooperating with both of said members to define low and high pressure sides within the compression chamber, an oil reservoir having a normal oil level below a radial edge of said blade, means for supplying lubricant to operating parts of said unit, means including a cup-shaped bracket disposed exteriorly of said stationary member and adapted to receive lubricant during operation of the motor to a level to submerge said blade to provide a liquid seal between said blade and said slot to prevent leakage of discharge pressure gases from said high pressure side through said slot, said oil in said cup-shaped bracket being subjected to discharge pressure gas in said sealed unit during operation of said compressor, bleed hole means in said cup-shaped bracket effective to lower the oil level in said cup-shaped bracket to the normal oil level in the oil reservoir during inoperation of the motor to break the liquid seal thereby to permit leakage of discharge pressure gases into the low side of the compression chamber to balance the pressures and unload the compressor, and means including a spring one end of which being in engagement with portions of said cup-shaped bracket and the other end of which being in engagement with said blade to exert a force in a direction tending to urge said blade toward said rotatable member arranged in said compression chamber.

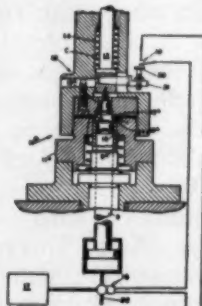
2,713,996. HEAT EXCHANGER. John E. Pottharst, Jr., New Orleans, La. Application Oct. 23, 1952. Serial No. 316,481. 13 Claims. (Cl. 257-947.)



1. A heat exchanger comprising, a plurality of concentrically mounted inner and outer tubes, connecting means between the ends of pairs of outer tubes, connecting means between the ends of pairs of inner tubes, threaded means adjustable to produce relative axial movement between the inner and outer tubes to secure the outer tubes and the outer tube connecting means associated therewith in fluid tight relationship and to exert tension on said inner tubes.

Week of August 9

2,714,759. APPARATUS FOR CLOSING AND STANDARDIZING THERMOSTATIC POWER ELEMENTS. Adolf Von Wangenheim, Detroit, Mich., assignor to Detroit Controls Corp., a corporation of Michigan. Application Sept. 29, 1949. Serial No. 118,659. 2 Claims. (Cl. 29-33.)



1. An apparatus for closing and standardizing a thermostatic power element which comprises a cup portion with a bottom wall and an outwardly facing annular supporting surface, a closure element having a peripheral portion seatable on said outwardly facing annular supporting surface, a diaphragm member positioned between said outwardly facing surface and said peripheral portion, temperature responsive material within said cup portion, said closure element having a guideway extending substantially normal to said diaphragm member, and thrust means reciprocal in said guideway and having cooperative relation with said diaphragm member for movement thereby; said apparatus comprising a

Editor's Note: Patents for week of Aug. 2 will appear in an early issue.

supporting structure having a bore with a surrounding annular supporting portion, an abutment member positioned adjacent to and movable toward and away from said supporting portion, indenting means positioned in said bore and reciprocally movable therein, said apparatus being adapted to close and standardize a thermostatic power element positioned in said bore, said first-named annular supporting surface adapted to support said cup portion, said abutment member positioned in overlying relation to said closure element peripheral portion and movable to urge said peripheral portion toward said outwardly facing supporting surface and to compress said diaphragm member between said peripheral portion and said outwardly facing annular supporting surface thereby closing said thermostatic power element, said indenting means being movable to deform inwardly said cup portion bottom wall to move said thrust means outwardly to a position at a

Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

ARMY

Purchasing Branch, Fort Monroe, Va. REPLACEMENT OF HEATING AND HOT WATER EQUIPMENT and related work in 14 buildings at Fort Monroe, Va.—Job—IFB 44-036-56-14B—Bid Opening 13 Dec. 55.

Huntington District, Corps of Engineers, U. S. Army, 237 Fourth Ave., Huntington 19, W. Va. MODIFICATION OF CENTRAL HEATING PLANT at Wilkins Air Force Station, Shelby, Ohio—Job—IFB ENG-46-022-56-10B—Bid Opening 28 Dec. 55.

NAVY

Commandant of the Marine Corps, Washington, D. C. Code (CSG) Following items are procured under IFB 126 G—Bid Opening 29 Dec. 55. AIR CONDITIONING UNITS, Room Electric Type 1, Federal Spec. 00-A-372 and Amend 1 with exception—65 ea.—AIR CONDITIONING UNITS, Space, Electric Type IV, Federal Spec. 00-A-372 and Amend 1 with exception—14 ea.

AIR FORCE

Contracting Office, Patrick Air Force Base, Fla. Services and Materials for COOLING SYSTEM, Flac & Tare, Patrick Air Force Base, Fla.—Job—IFB 08-606-56-76B—Bid Opening 22 Dec. 55.

Base Contracting Office, Whiteman Air Force Base, Sedalia, Mo. AIR CONDITIONING, Bas Hq., Project No. (37-56)B—Job—IFB 23-606-56-42—Bid Opening 9 Dec. 55.

Purchasing and Contracting Office, George Air Force Base, Calif. MODIFY EVAPORATIVE COOLING in hospital barracks—Bldg. Nos. 259, 260, 261 and 262—Job—IFB 04-609-56-49-B—Bid Opening 12 Dec. 55.

Contracting Office, Mobile Air Materiel Area, Brookley Air Force Base, Ala. INSTALLING AIR CONDITIONING SYSTEM, Building 11 at Brookley Air Force Base, Ala.—Job—IFB-01-601-56-190—Bid Opening 15 Dec. 55.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 2, Business Service Center, 250 Hudson St., New York 13, N. Y. Following items are procured under IFB NY-3T-65507—Bid Opening 12-16-55. FANS, ELEC., Hassock Type, 2188 ea.—PEDESTAL TYPE, 2297 ea.—Definite Qty. & Term Contract.

FANS, ELEC. BRACKET & DESK TYPE, Def. Qty. & Term Contract, 16880 ea.—IFB NY-3T-65508—Bid Opening 12-16-55.

General Services Administration, Region 5, 575 U. S. Courthouse, 219 South Clark St., Chicago, Ill. REFRIGERATORS—25 ea.—IFB CHD-1080—Bid Opening 12-13-55.

General Services Administration, 19th & F Sts., N.W., Washington 25, D. C. COMPLETION AIR CONDITIONING SYSTEM in Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio. Furnishing & installing refrigerating machines, condensing & chilled water pumps, motors & controls, cooling tower, chilled water cooling coils, condenser & chilled water piping, & Miscellaneous items required to complete the system. Roughly the system includes 2 centrifugal compressors, 220 tons each; 2 chilled water pumps, 2 condenser water pumps, a 2-cell cooling tower, cooling coils & eliminators in existing air handling system. Bidding material available at room 0. 1304, General Services Building, 19th & F Sts., N.W., Washington 25, D.C. Phone Executive 3-4900, Extension 2397—Job—IFB 33-033-2—Bid Opening on Dec. 21, 55.

General Services Administration, Region IV, 50 Seventh St., N.E., Atlanta, Ga. NEW AIR CONDITIONING, Jackson, Miss. Post Office and Court House—Job—IFB CR4-1125—Bid Opening 12-16-55.

U. S. DEPARTMENT OF COMMERCE

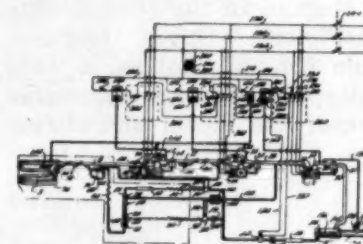
Chief, Contract and Claims Section, Civil Aeronautics Administration, 5651 West Manchester Ave., Los Angeles 45, Calif. 3 1/2 ton Refrigerative Type AIR CONDITIONER, with pre-cut duct and duct fittings—1 to 6 ea.—IFB 4-56-105—Bid Opening 12-12-55.

U. S. INFORMATION AGENCY

U. S. Information, Procurement Branch, 1734 New York Ave., NW., Washington, D. C. AIR CONDITIONING UNITS for heating and cooling one ton 230 volt 50 cycle—4 ea.—IFB 56-111—Bid Opening 11-30-55.

predetermined distance from said supporting structure, and means operable to limit movement of said indenting means upon attainment of said position thereby standardizing said thermostatic power element.

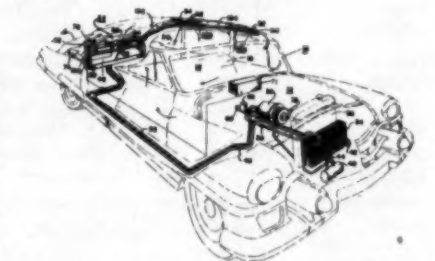
2,714,806. REFRIGERATING SYSTEM. Hugh J. Scullen, Detroit, Mich. Application Dec. 12, 1951. Serial No. 261,313. 18 Claims. (Cl. 62-4.)



1. In a refrigerating system for cooling a space, an evaporator having an inlet and an outlet and arranged in heat exchange relation with such space, at least three refrigerant compressors each having a suction connection, and a discharge connection and a connection for returning lubricant thereto, a condenser for refrigerant having an inlet and an outlet means providing a first fluid flow passageway from said discharge connection of one of said compressors to said condenser inlet, means providing a second fluid flow passageway connecting said condenser outlet to said evaporator inlet, a third fluid flow passageway connecting said discharge connection of a second of said compressors to said first compressor suction connection, a fourth fluid flow passageway connecting said evaporator outlet with said suction connection of a third of said compressors, a fifth fluid flow passageway connecting said third compressor discharge connection to said second compressor suction connection, a plurality of lubricant separators individually connected with said discharge connection of said compressors, said separation having a lubricant return connection connected to said lubricant connection of the one of said compressors with which it is individually associated, said second passageway including three flow controlling devices arranged in series therein, means including said first said compressor for substantially eliminating flash gas formed as a consequence of flow of liquid refrigerant through a first of said devices, means including said first and said second

compressors for substantially eliminating the flash gas formed as a consequence of flow of liquid refrigerant through a second of said devices, means responsive to the temperature of said space for controlling the operation of said first compressor, means responsive to an operating condition of said first compressor for controlling the operation of said second compressor, and means responsive to an operating condition of said second compressor for controlling the operation of said third compressor.

2,714,808. REFRIGERATING APPARATUS. Webster J. Owen and John F. Gordon, Birmingham, and Philip W. Maurer, Dearborn, Mich., assignors to General Motors Corp., Detroit, Mich., a corporation of Delaware.



12. In combination, an automobile having a passenger compartment, a luggage compartment, and an engine compartment, seating means within said passenger compartment, an evaporator housing within said luggage compartment, a ledge behind said seating means overlying a portion of said luggage compartment, said ledge having a plurality of openings provided therein, means for connecting one of said openings to the inlet of said evaporator housing, means for connecting a second of said openings to the outlet of said evaporator housing, an air distributing duct extending along the side wall of said passenger compartment, a head rail adjacent the ceiling of said passenger compartment, and means for attaching said duct to said head rail, a head liner concealing said duct, and air outlet grilles provided at spaced points along said air distributing duct, each of said air outlet grilles having a first adjustable air deflector means mounted for pivotal movement about a horizontal axis for directing one portion of the air and having a second air deflector mounted for rotation.

(To Be Continued)

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Servicing Automobile Air Conditioners

BY C. DALE MERICLE

This instalment continues the discussion of the automobile air conditioner supplied by Chevrolet as a factory installed accessory.

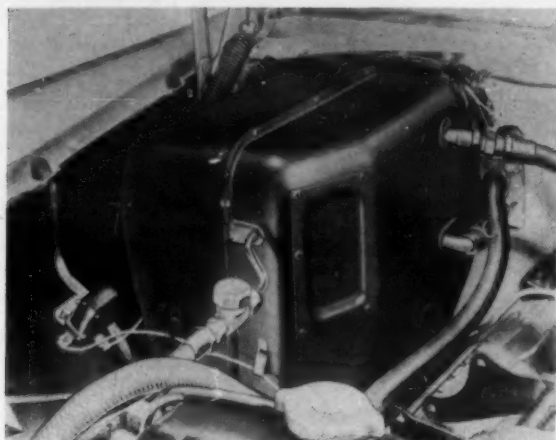


FIG. 4—"Conditioning unit" of Chevrolet air conditioner. Note sight glass, access plate, and relay (lower left).

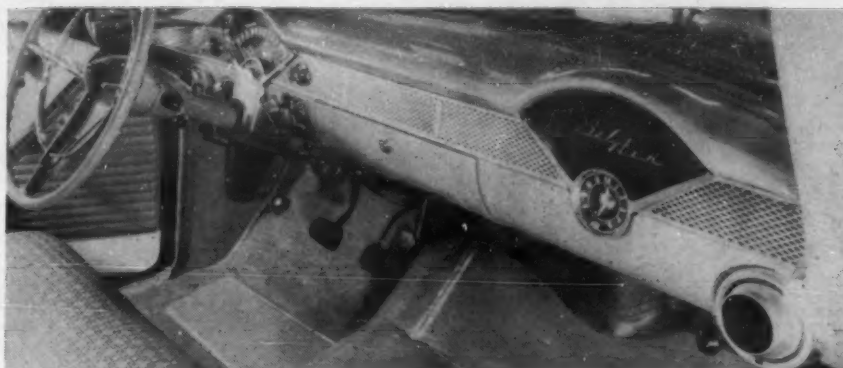


FIG. 5—This view of instrument panel shows air outlet nozzles on dash and control panel to right of ignition switch on 1955 Chevrolet.

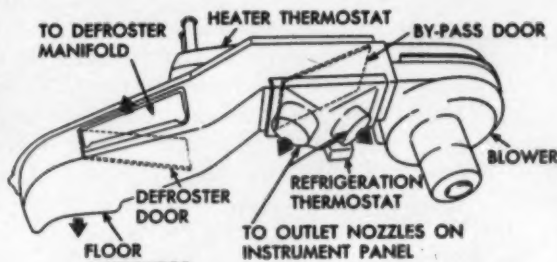


FIG. 6 is a schematic view of air distributor used on 1955 Chevrolet system.

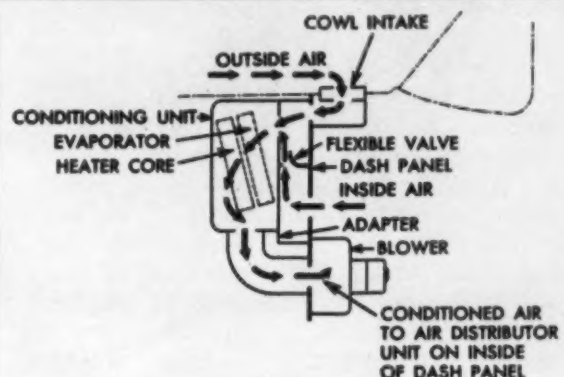


FIG. 7 shows path of air flow through Chevrolet air conditioner.

CHEVROLET (2)

Condenser

The all-steel, brazed condenser mounts in front of the car radiator.

Inlet to the condenser is at the upper right side, outlet is at the lower right side.

A combination receiver-dehydrator used in the Chevrolet system is located on the right side of the condenser. Inlet is at the top of the unit, outlet at the bottom.

Flexible hoses are employed as refrigerant lines in the Chevrolet air conditioner.

A sight glass is provided in the liquid line, being located just ahead of the evaporator-heater coil housing.

Evaporator

The evaporator is located in a "conditioning unit" assembly attached to the firewall on the right side of the engine compartment. The insulated housing also contains the thermostatic expansion valve and the heating coil. (See Fig. 4).

An access cover is provided on the housing to permit adjustment of the expansion valve should that become necessary.

Thermostatic expansion valve employed on the Chevrolet air conditioner is of the external equalizer type. The external equalizer line connects into the suction line after the bulb of the expansion valve.

Blower used with the Chevrolet air conditioning system (and for winter heating, also) is entirely separate from the evaporator-heater coil assembly. It is mounted on the firewall on the passenger compartment side. It has a 12-volt d.c. motor rated at 1/4 hp. At full speed the blower has a capacity of 150 c.f.m.

Because the car engine cooling system is exposed to the low temperatures of the refrigeration system at the evaporator within the conditioning unit housing, Chevrolet cautions that the engine cooling system must be protected with anti-freeze at all times (summer and winter) to a temperature of 20° F. or below.

Controls

Considerable variation of cooling effect and air distribution is possible with the control system employed by Chevrolet for both the cooling and heating

cycles of its air conditioning system.

Seven manually operated controls are provided in the 1955 system.

Five of the controls move through slots in a control panel mounted on the instrument panel to the right of the driver. (See Fig. 5). Two pull-out knobs are mounted on the instrument panel lower flange below the control panel.

The lower left pull-out knob regulates the amount of air distributed through the adjustable nozzles at each end of the instrument panel and to the front compartment floor outlet by means of a by-pass door (See Fig. 6).

If heating only is desired, this knob is normally pushed all the way in to block all the air to the instrument panel nozzles.

The nozzles may be positioned to direct cool air along the inside roof line, downward, or directly at the passengers.

The lower right pull-out knob is a manual throttle or fast idle control. It enables the driver to maintain a high enough engine idling speed when the car is parked for satisfactory operation of the compressor. When this knob is pulled out fully, the engine operates at a fast idle of 900 r.p.m.

Top control lever of the five levers in the instrument panel is the two-speed blower control which can be set for "off," "fan," or "hi."

To prevent the refrigeration

system from operating with insufficient air supply, the wiring is so arranged that current becomes available to engage the magnetic compressor clutch only when the blower switch is at the "fan" or "hi" position.

Immediately below the blower control is another lever which moves horizontally, stopping either at "outside air" on the left or "inside air" on the right.

This knob is connected by cable to a door hinged over the cowl intake passage to the upper chamber of an adapter housing mounted between the dash panel and the conditioning unit.

When positioned at "outside air," the conditioning unit receives outside air directly from the cowl intake through the upper chamber. When outside air becomes excessively contaminated, as in slow moving traffic, this knob may be moved to "inside air." The blower then recirculates inside air through the conditioning unit. See Fig. 7.

Below these two controls are three vertical slots in the control panel. These are designated from left to right as "heat," "refr.," and "defr."

The "defr." control knob positions the defroster door. As the knob is moved down, the amount of air directed to the windshield defroster is increased.

The "heat" control knob adjusts the heater thermostatic valve. Moving the knob down increases the temperature setting.

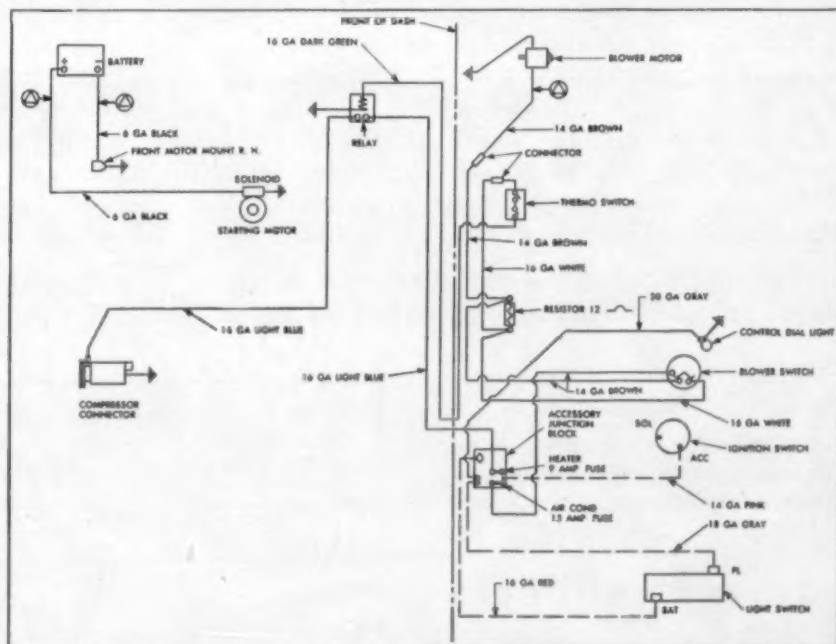


FIG. 8 is wiring diagram of 1955 Chevrolet air conditioning unit.

For more information about products advertised on this page use Information Center, page 18.

of the adjustable thermostat.

As previously explained, the cooling thermostat cuts the compressor in and out as required by energizing or de-energizing the magnetic clutch.

Complete wiring diagram of the Chevrolet system is shown in Fig. 8.

(To Be Continued)

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REFRIGERATION ENGINEER thoroughly experienced supervision, testing in commercial residential installation; high-type executive. Give complete information—age, experience, salary, references. Established manufacturer—Midwest. Replies confidential. BOX A5398, Air Conditioning & Refrigeration News.

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MANUFACTURERS ATTENTION! Responsible, long-established wholesale distributor covering state of Virginia seeks attractive room air conditioner line on consignment or commission basis. Must be priced realistically. We offer warehousing, salesmen, dealer following, know-how. Former supplier discontinued manufacturing room models. Will work on close margin. Your reply strictly confidential. BOX A5399, Air Conditioning & Refrigeration News.

Du Pont Air Conditioning Survey--

(Concluded from Page 1, Col. 3) cated they were trying to beat the heat and humidity with evaporative coolers, and similar non-mechanical cooling systems.

Air conditioned homes are most generally "appliance homes," that is, they have a high saturation of major appliances already purchased. This would indicate that such homes that are non-conditioned are prime prospects.

It was also shown that more owners of air conditioners work in air conditioned places than do non-owners (42% of the owners work in air conditioned places).

Of the owners of air conditioners interviewed in the survey, it was shown that the man dominates the buying decision. (56% of the sample).

5.9% HAVE SPECIFIC INTENT TO PURCHASE

One figure brought out in the survey that the Du Pont investigators feel is quite significant is that 5.9% of those interviewed stated that they had a specific intent to purchase air conditioners. Since this compares to the only 4.3% that have purchased thus far, it shows a rising buying interest.

Asked "reasons why" they bought the particular make they did, 38% said price was the big factor; 34.9% said they bought on brand or dealer reputation; and only 10% said they were "sold" on a particular brand by the salesman.

MAJOR COMPLAINTS

Major complaints were as follows:

(1) Cools only one room—26%.

(2) Not as much cooling as anticipated—25.8%.

(3) Too much noise—12.7%.

Of those covered in the survey, 12.3% had two units per home, and 2% had three or more units.

So many facts were turned up in the study, just completed for Du Pont by W. R. Simmons and Associates Research, Inc., that several weeks will be required to fully analyze the results, said A. J. Thompson, director of sales for Du Pont's "Kinetic" Chemicals Div.

28% LIST HEALTH AS REASON FOR BUYING

About half the owners of room units said they had bought their cooling units during the hottest part of the summer while 28% attributed their purchases to health reasons. Five per cent said they bought home units because they "got used to it" at their places of employment or in friends' homes.

Coolness topped the list of things owners said they liked best about their room air conditioners, with 40% mentioning that feature. Another 22% said they could sleep much better after installing a mechanical cooler, while 9% mentioned humidity control features and 8% said the units helped provide a dust-free room, with reduction in cleaning chores.

Just a fraction under half of the owners said their air conditioners were installed in bedrooms, while 34% chose the living room as the cooler site.

Ownership of room air condi-

tioners was heaviest among those families owning their homes. Renters accounted for only 23.7% of the total cooling unit owners.

30% OF OWNERS LIVE IN \$10-\$15,000 HOMES

Ownership of room cooling units was greatest among owners or renters of homes in the \$10-15,000 class, which accounted for 30%. Another 44% of the units owned were divided equally between homes in the \$7,500-\$10,000 and \$15-20,000 ranges.

Among non-owners of room air conditioners, the most frequently mentioned deterrents to purchase were price, cost of adequate wiring, high costs of operation, and, in the case of renters, landlord regulations against installation.

Penguin Sales and Freeze-Rite Merge

ATLANTIC CITY, N. J.—Bailey & Perkins Co., Freeze-rite Div., Utica, Mich., and Penguin Sales Div., Worden Specialty & Machine Co., Inc., Plymouth, Mich., announced at the ARI Exposition here that they have merged under the name of Freeze-rite (a division of Worden Specialty & Machine Co.).

Freeze-rite is a partnership, with Clare Perkins as general manager and C. D. Young as director of sales.

R. F. Schutz Promoted

CHICAGO — Promotion of Robert F. Schutz from manager to vice president and manager of the Ingersoll Kalamazoo Div. of Borg-Warner Corp. was announced by J. H. Ingersoll, president of the division.

Soft Drink Industry--

(Concluded from Page 1, Col. 4) been one of the most neglected areas in the bottling plant, it is now getting the attention of "professionals" who can tell the bottler how to best lay it out, keep it clean, and operate it for best results.

The bottlers applauded Alfred N. Steele, chairman of the board of the Pepsi-Cola Co. when he urged them to drop their conservative thinking and start promoting their products hard again as they did prior to 1950.

"Our product," he reminded the 10,000 soft drink bottlers gathered for the meeting, "will not clean teeth, shine shoes, or restore health. It is not needed by anybody, but is something to be enjoyed and shared with a neighbor."

He condemned thinking that tries to sell by cutting prices

and profits. Without a profit we can't promote and without industry promotion we can't survive, he declared.

He noted that it has been proved over and over again that good promotion will bring immediate increases in sales for everybody in the soft drink business, no matter who does it.

Servel Names Outlet

EVANSVILLE, Ind. — Anslinger Air Conditioning Co. of Corpus Christi, Texas has been appointed as distributor of Servel air conditioning products in the Corpus Christi trading area.

The announcement was made by A. J. DeFino, vice president and general manager of the air conditioning division of Servel, Inc.



The UNARCO dual-vector* offers clean, hot water heat in winter ...cool dehumidified air in summer

The UNARCO DUAL-VECTOR is a quality product newly designed to make economically feasible the combination of a fine hot water heating system and a chilled water cooling system.

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or chilled water cooling using the same system.

What's more, the initial cost is often less than other combination systems which lack the acknowledged advantages of "wet" heat. And because each unit is individually controlled, you can heat or cool as few or as many rooms as desired. Thus the money saved in winter will help pay for your summer cooling comfort. Clip and send in coupon below for detailed information. *trade mark

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UNION ASBESTOS & RUBBER COMPANY
Dept. HC-100R-F
332 S. Michigan Avenue, Chicago 4, Ill.

Name _____
Company _____
Address _____
City _____ State _____